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MacBook Air

Thinking of getting a Backup Battery for your iPhone?

These two juicy models give you a choice of 1200 or 1800 mAh, with new features, free shipping, and super customer service.

Made for iPod

Works with iPhone

Order two and save!

- Now with optional Ultra Bright Flashlight
- Fits most cases

RichardSolo 1200 is the perfect pocket solution for only $49.95. Free wall charger included!

by Richard Thalheimer

My iPhone is my favorite product, though I use it so much, it gets low on battery power by dinner. This led me to develop these two different rechargeable Smart Backup solutions, specifically for iPhone and iPod. Just snap it on (no cable), and it begins to charge the iPhone battery. This powerful 1200 mAh is the most capacity in a really small pocket size. You can charge the iPhone while using it, and you can charge the battery and iPhone together with included USB or 110-240v AC wall plug charger — like getting an extra charger for free!

Other chargers use disposable AAs, or cheap plastic cases, or gray-market connectors, and may even damage your iPhone. This one is certified for iPhone 2G/3G. Polymerized lithium-ion takes hundreds of charges and doesn't develop memory. Three LED lights indicate charge status. Works with iPhone 2G/3G and all iPod models except shuffle. Kit includes one 1200 battery, one AC Wall charger, and one USB cable.

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— ***CrunchGear***

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— ***iPhone24x7***

"With its simple, easy-to-use design, the Backup Battery will zap your Apple iPhone and iPod partway back to life when you're running out of juice."
— ***CNET***

"This is a must have iPhone/iPod accessory. When I say 'must have', I mean get online and buy it, NOW!" Editor's Choice Award
— ***BuyMeAniPhone.com***

"The RichardSolo will revolutionize how I keep the iPhone battery charged and raring to go."
— ***JKontheRun.com***

"I have had it for 5 months and it still works flawlessly just like the day it arrived"
— ***The Mobile Gadgeteer***

RichardSolo 1800 provides a built-in laser pointer and an ultra-bright flashlight. Free wall charger and car charger included!

The new RichardSolo 1800 has capacity and features that really set it apart from the competition. Large 1800 mAh capacity will charge your iPhone/iPod or BlackBerry® completely to full, with more power left over for later charging. Just snap it on-no cable required! Can be used with every case.

110-240v AC wall charger included for fast charging. And, you can use the iPhone while charging it, and you can charge the RichardSolo 1800 and iPhone together at the same time, with the included USB cable, AC wall charger, or USB car charger — like getting two extra chargers for free! When you travel, there's no need to carry two chargers.

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These are actual customer comments:

I had read a number of glowing reviews about RichardSolo quality, and am thrilled to discover your support is top notch. Thanks again for the fantastic customer care — you've certainly gained my loyalty.
— D.G.

I'm sure you can appreciate how little true "customer service" is evidenced in today's business environment. To have you and your company exhibit such exceptional service is unbelievably refreshing. Thank you, Thank you, thank you!!! I will be highly recommending your company to anyone I encounter.
— P.S.

Dear Richard and Team: This is what I call great customer support. I wish more companies would figure this out these days. Thank you so much.
— D.C.

I've tried ALL the others products AND yours is the ONLY one that works correctly!!!!
— H.L.

Your service and attention was first rate and I will recommend that all my friends with iPhones or iPods purchase your product with confidence that if there is a problem, you guys will fix it! Good customer service is getting more rare each day so a big THANK YOU to you and your company.
— T.C.

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— T.K.

Richard, thank you. That was the fastest response I have ever received. Great product by the way. Appreciate the assistance.
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— L.L.

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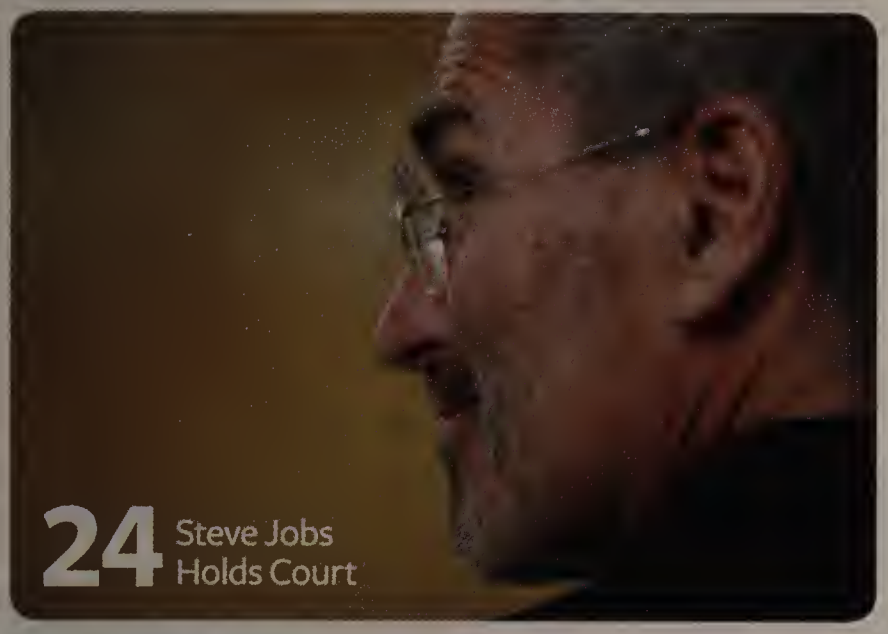
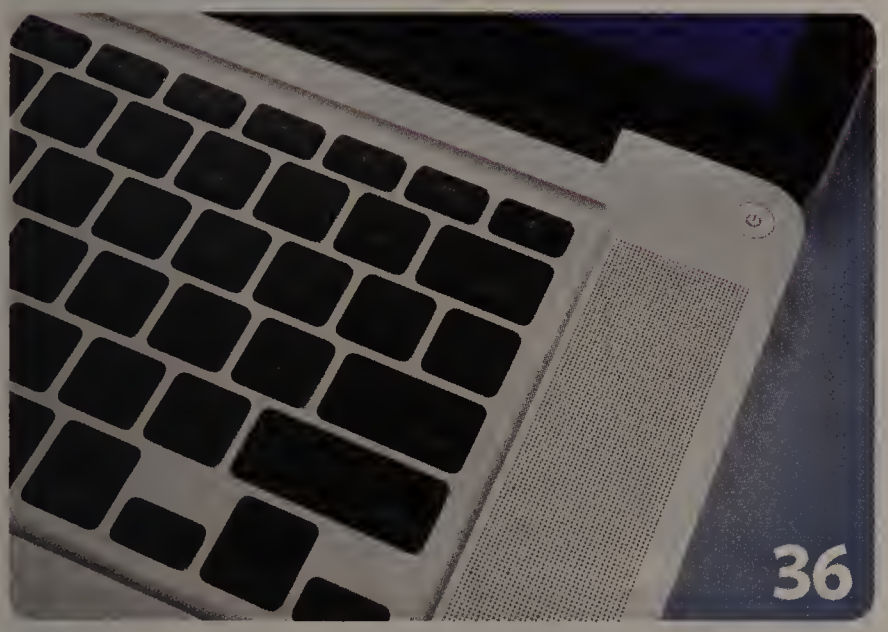
CONTENTS

January 2009





OPINION

9 From the Editor's Desk
As the Mac turns 25, Jason Snell looks at how our favorite computer has changed—and how it hasn't.

18 Feedback
Readers respond.

MAC USER

24 Steve Jobs Holds Court
Surprise appearance on earnings call furnishes information.

28 Greenpeace Shows a Little Apple Love
New MacBooks score environmental points.

33 DisplayPort: The New Game in Town
Here's what you need to know about the latest video connector.

34 Hot Stuff
Check out the cool stuff we're into right now.

REVIEWS

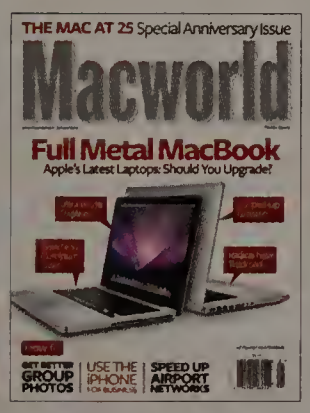
36 MacBook Makeover
New cases, screens, trackpads, and graphics chips adorn Apple's updated MacBooks and MacBook Pros.

44 macworld.com/reviews
We're constantly reviewing the latest Mac hardware and software on Macworld.com. Here are quick summaries of this month's online exclusives.

46 App Store Selections
The App Store features thousands of applications for your iPhone and iPod touch. Each month, we review the software that's caught our eye.

48 Mac Gems
Quickly resize your on-screen windows, make your iPod headphones fit better, and more.

52 Top Products
Looking for a new printer, monitor, digital camera, or other hardware? Check out our current favorites, as well as a complete listing of all current Macs and iPods.



On the Covers

This month, we have two covers. Our special anniversary cover (left; photography by Will Mosgrove) was mailed to subscribers and is available at select newsstands; our MacBook cover (right; photography by Peter Belanger) is available only on newsstands. To order an issue with our special anniversary cover, visit macworld.com/4193.

COVER STORY

54 The Mac at 25
It's been 25 years since Apple introduced the Mac. We take a look back—and, more important, a look forward to what's next.

FEATURE

74 Beyond AirPort
Is your AirPort hardware keeping up with your networking needs? If not, look to these tips to help you upgrade it right.

SECRETS

91 Working Mac
No assistant? No problem. Use e-mail, SMS text messages, RSS feeds, phone calls, and more to remind yourself about important tasks and events.

94 Playlist
Control music around the house with Apple's Remote app for the iPhone and iPod touch and an AirPort Express base station or Apple TV.

96 Recording Studio
Learn about the hardware, software, and tips you need to get started with podcasting.

98 Digital Photo
Make all your group shots look great with Photoshop Elements 6's Photomerge Group Shot feature.

100 Mobile Mac
From dictation tools to phone directories, here are nine apps that'll help you do real work on your iPhone.

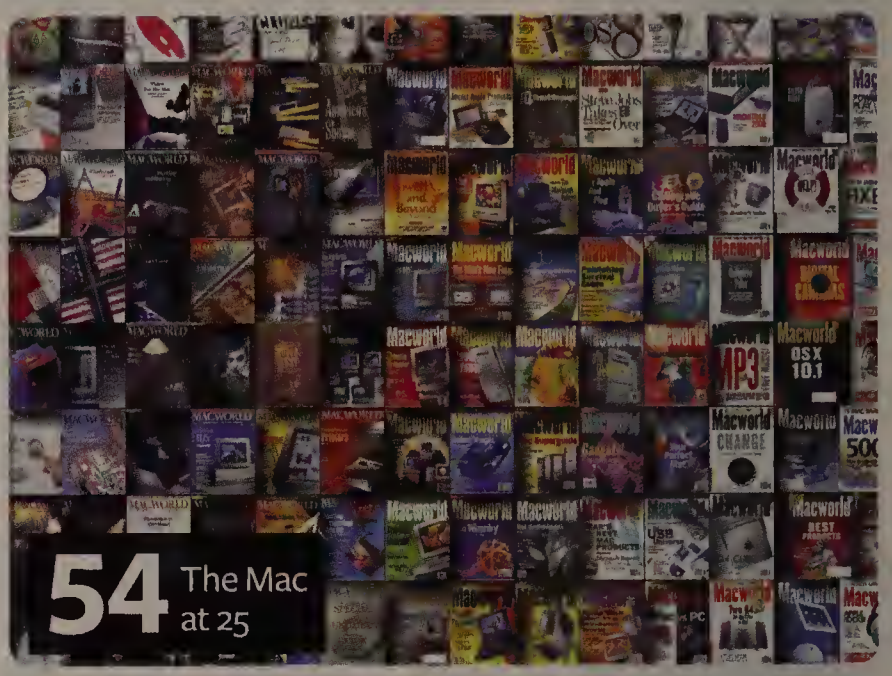
HELP DESK

102 Mac OS X Hints
Tap hidden controls for the iTunes 8 Visualizer, learn what Exposé can do for you, and get more out of Mail's data detectors.

106 Mac 911
Store files in cross-platform disk images, control the default fonts Pages uses, learn some slide-show tricks, and more.

BACK PAGE

128 Spotlight
Macworld Expo chief Paul Kent explains the show's role in the Mac community.



MACWORLD.COM'S TOP 5

The top 5 stories on Macworld.com are:

1 **Live Update: Apple's Notebook Event**
Jason Snell blogs about Apple's special October event in Cupertino (macworld.com/4075).

2 **First Look: MacBook and MacBook Pro**
Check out our quick hands-on tour of what's new and different in Apple's updated laptops (macworld.com/4076).

3 **MacBook Benchmarks**
Macworld Lab tests show that Apple's latest consumer laptops perform better than their predecessors (macworld.com/4077).

4 **Slideshow: First Pictures! Apple's Notebook Event**
Laptops were the star of Apple's October 14 media event in Cupertino (macworld.com/4078).

5 **Review: MacBook Pro Core 2 Duo/2.4GHz and 2.53GHz**
Our review finds that the sleek laptops have been remodeled from the inside out (macworld.com/4062).

(Ranking valid as of October 28, 2008.)

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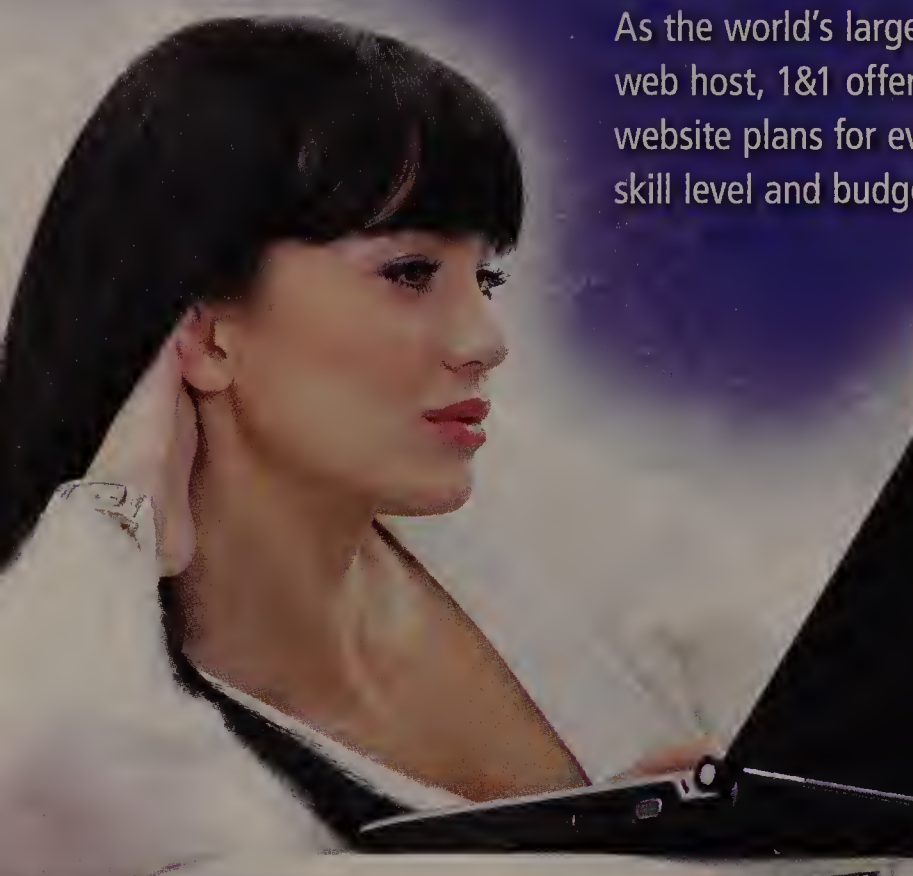

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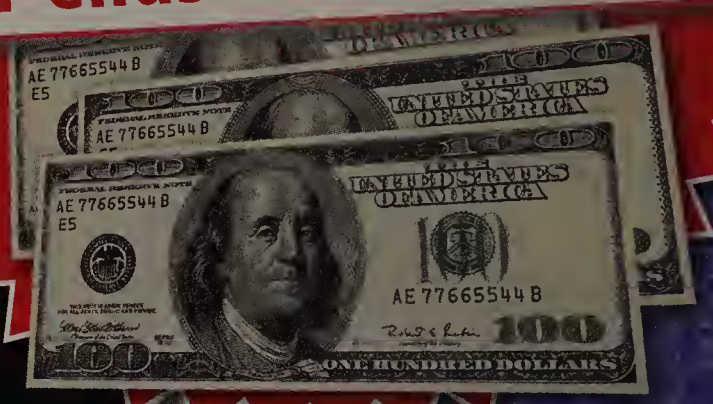

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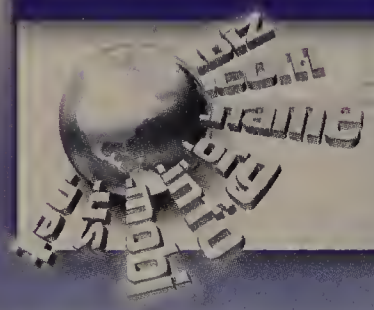

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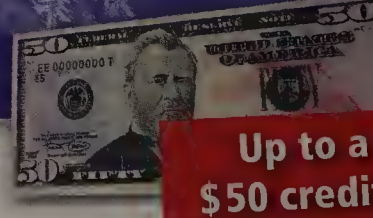

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 By Jason Snell

From 1984 to 2009...

25 years of Mac history—and the next few years of Apple's future

As I write this, I have the very first issue of *Macworld* sitting in front of me. It's a magazine without a date: it made its debut the same day the Mac did—January 24, 1984. And so with this issue, we mark the 25th birthday of both the Mac and *Macworld* magazine.

Steve Jobs is on the cover of that first issue, wearing a brown pin-striped suit, an image we've reprinted on some copies of this anniversary issue. In front of Jobs are three all-in-one Macs. Of course, they're the originals. But I'm struck by the fact that the iMac—an all-in-one device designed for mainstream computer users—continues to be inspired by those very first Macs.

Inside that issue, Microsoft's Bill Gates appears on page 42, explaining why the Macintosh is a "classic" computer. And two in-depth articles cover MultiPlan, Microsoft's clever number-crunching program that was the predecessor to Excel.

A lot of the ideas introduced in that first issue seem remarkably normal today. The very first feature article, "A Tour of the Mac Desktop," includes an illustration of features I can see on my Mac screen now: a menu bar with an Apple logo in the left corner, a window full of files and folders represented by icons and names, and a desktop area.

The difference, of course, is that today these concepts are absolutely common. Back in 1984, that first article had to carefully explain the concept of the desktop; its entire first page was devoted to a complicated metaphor about trying to drive a car with a keyboard instead of a steering wheel. That's the triumph of the Mac: it irrevocably changed how people and computers interact.

PHOTOGRAPH BY PETER BELANGER

Looking Forward

But Apple, of all companies, is not prone to looking back. With the iPhone, especially, we see the company changing the way people use cell phones and other handheld devices. And here, 25 years after it was introduced, the Mac is more successful than it has ever been. Apple sold more Macs in the last year than it has ever before sold in a single year, and sales are accelerating.

That's the triumph of the Mac—25 years ago, our first article had to carefully explain the concept of the desktop!

That's why this issue is about what comes next. Beginning on page 54, you'll find previews of where technology could be headed in the next few years. There's also a timeline of Mac history; and a few Mac notables offer their opinionated picks for the best (and the worst) the past 25 years had to offer. But the focus is on the future, as it should be.

As for where Apple goes next, I think we all have a general idea. The company is going to continue using the playbook that has served it in good stead since the day Apple was founded: combining innovative hardware and software in a seamless package. Apple has succeeded by realizing that technology companies fail when they specialize on hardware or software to the exclusion of the other. The best products are those that fuse hardware and software together to produce just what the user ordered.

We saw that 25 years ago with the original Mac, which was a quantum leap forward in the usability of personal computers. We saw it with the iPod in 2001, and again with the iPhone in 2007. The people locked inside a development room somewhere on Apple's Cupertino campus know the identity of that next great product, but the rest of us will just have to watch and wait.

Staying Safe

Mac users are accustomed to looking at their Windows-using friends, with their virus checkers, spyware, and the like, and feeling just a little bit superior. And with good reason—so far, the Mac hasn't been plagued with the security problems that Windows has.

But things are changing. As the Mac grows in popularity, it becomes a bigger target for hackers and authors of virus programs. But some of the biggest privacy and security risks a Mac user will face won't occur on the Mac itself. They'll happen when personal data moves through the big, wide world of the Internet, where criminals are lurking, trying to steal data, identities, and—of course—money.

That's why we created the brand-new *Macworld Mac Security Superguide*. In one handy 84-page volume, we've collected everything you need to know to keep the data on your hard drive and the data you send over the Internet safe and secure. To buy a copy at a special discount, visit macworld.com/4179.

Send comments to VP/Editorial Director **Jason Snell** at jason_snell@macworld.com, or peer inside his brain by following him on Twitter at twitter.com/jsnell.

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HANDLE WITH CARE

COMMON SENSE STORAGE

devices that only a couple of years ago were found just in data centers. These were once only available as big-ticket items, but now they can be purchased for as little as a few hundred dollars. And technology that used to require dedicated IT support is now usable enough for a home network owner.

NAS devices are essentially computer systems with a stripped down operating system—often an open source derivative that helps to keep costs down—with no monitor or keyboard required. Typically, you simply plug in an Ethernet cable, follow start-up directions, and you're off and running. You can make that connection to a wireless router, or even buy a wireless-enabled NAS to eliminate the physical connection entirely.

RAID systems utilize multiple hard drives to speed performance or provide duplication of data so that a disk failure doesn't result in data loss. RAID systems can be configured to different "levels" that provide a range of features, including "striping" or splitting data across multiple disks, mirroring data, and fault tolerance that ensures the system continues operations even in the event that one of the disks fails. Some systems even allow you to "hot swap" in a new disk drive for a failed one while the rest of the system remains up and running.

In Your Interface

A while back, computer equipment manufacturers found they could expand their markets and shave costs at the same time by adopting standardized interfaces to storage devices and other peripherals.

Many creative professionals are fans of the FireWire 800 interface that delivers blazingly fast data transfer rates up to 800 megabits per second (Mbps). Many users utilize the older FireWire 400Mbps interface, while others prefer the USB interface common across Windows-based systems and rated at up to 480Mbps, or the newer eSATA interface with up to 3.0Gbps transfer rate.

Savvy storage system manufacturers are increasingly featuring multiple interfaces in their systems—which, in some cases, include the 1Gbps Ethernet connection—in order to appeal to the largest possible base of potential customers. With these multiple interface systems, computer users can find just about any system to meet their needs, with assurance that they can move it over to a new system in the future.

Through the Looking Glass

The most common form of data backup is still optical—either CD or DVD drives. One advantage, of course, is that you can burn a disk to hand over to somebody else, making it particularly useful for sharing music and videos.

But no technology stands still, and these days Blu-ray drives now provide high-definition video capabilities and data storage capacity of up to 50GB per double-layer disk—that's room enough for many music libraries.

Out of Sight, Off-site

Off-site data storage is another formerly enterprise-only technology that once required either fancy high-speed networks or high-cost archive service providers. Today, with high-speed broadband widely available, online storage services are proliferating with a broad range of options to fit just about any need and budget.

Companies such as Mozy, Pro Softnet (IBackup) and Iomega (iStorage) can offer online access to back up data for just your most critical files, or your entire hard drive. Options range from free service for limited data storage to hundreds of dollars per month for large volume. Some services also provide physical disk archiving capabilities.

No matter what your storage requirements are these days, there's an option and a price point to easily meet your needs. ■

Big-Time Speed, Capacity and Dependability

LaCie is committed to creating solutions that help professionals more easily manage their digital lives. The company is meeting the challenge from increasingly tech-savvy customers by providing the highest speeds, greatest capacities, widest connectivity and the most dependable hardware and software available in every configuration for any platform.

The 5big Network RAID NAS system

Whether you need to connect your office computers through a shared network hard disk or get data security with a user-controlled RAID tower, LaCie has a professional solution to match your specific requirements.

One issue often overlooked by people working with video and audio files is the noise that storage systems may generate. In its new 4big Quadra RAID system and the 5big Network RAID NAS system, LaCie has implemented an ultra-quiet design perfect for the most noise-sensitive creative environments. LaCie also focuses on drive safety with the LaCie d2 heat sink design that provides 60% more surface area for greater natural heat dissipation.

By consistently innovating and being the first to market with new professional solutions, LaCie upholds its commitment to both sophisticated design and functional technology. Each LaCie product comes complete with industry-leading backup software, as well as thorough support documentation.

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New Age Storage for Anyone, Any Budget

Professional storage devices now come in all shapes and sizes, for all types of users—and are priced accordingly.

The increasing array—and affordability—of storage options is incredible. In 2000, you could get a hard drive with a capacity of somewhere between 10GB and 20GB of storage for $200. Today, you can get that capacity on a USB thumb drive for about $100 or so.

In the meantime, the myriad types and form factors of storage devices is mind-numbing. Aside from the aforementioned hard drives and thumb drives, you can find a sometimes bewildering assortment of storage appliances, RAID systems, online backup services, and optical storage devices to fit just about any need.

Data storage is increasingly an issue for everything from professional video/audio production to home photo, video, and music files. Today's users have access to seemingly unlimited sources of content.

Graphics designer Chuck Anzalone, owner of The Graphics Group in Provincetown, Mass., used to get by with an external hard drive, with which he could physically initiate backups. But when he upgraded to Mac OS X Leopard he couldn't find the drivers or assistance needed to make the old external drive work, so he opted for Apple's new Time Capsule, a combination wireless base station and external storage device that works with the Time Machine backup function of the Leopard operating system. "I had always been meaning to get an automatic backup, but it took the drive not working to get me to actually do it," he says.

From Data Center to Home

Many professional users with large and critical storage needs are turning to RAID systems (redundant array of independent disks) and appliances such as network-attached storage (NAS)

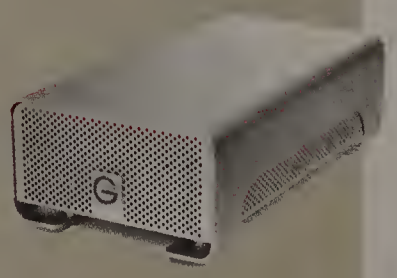
G-RAID 'A' Performance

G-Tech operates under the philosophy that if its storage products can meet the demanding needs of audio/video production, they're pretty much bulletproof for less stressful environments.

G-Technology Inc., a Fabrik company, manufactures the industry's most comprehensive line of external disk storage solutions designed for professional content creation applications.

G-Tech products range from ultra-portable, FireWire and USB bus-powered drives to superfast Fibre Channel systems with up to 24TB of storage. Systems are available for every level of sophistication, from single-disk, general storage units, to multi-disk RAID protected systems designed for higher performance and data redundancy—all at very competitive prices.

Hard drives last longer when they stay cool, so every G-Tech product incorporates cooling technology. Starting with heat-efficient enclosures, G-Tech equips single-disk units with large heat sinks bolted directly to the hard drive, while multi-disk systems use ultra-quiet "smart fans." G-Tech knows how to keep hard drives spinning for a long time.



The dual-drive G-RAID2

G-Tech systems look as good as they perform, featuring aircraft-grade aluminum enclosures and the highest quality electronics and hard disk drives. Just hold one in your hand and you can feel the difference.

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Yeah, that really hurt, but I'm still alive!

So I'm on my way to an ad agency in NYC, loaded with files for a stellar campaign, when it happened... I fell off the FedEx truck onto 49th Street and under the wheels of a passing bus. "Ouch!" I was severely mangled, but thanks to my rugged design and all-aluminum enclosure, I survived.* While my owner was amazed his campaign was intact, I was amazed I could still feel my hard drive.

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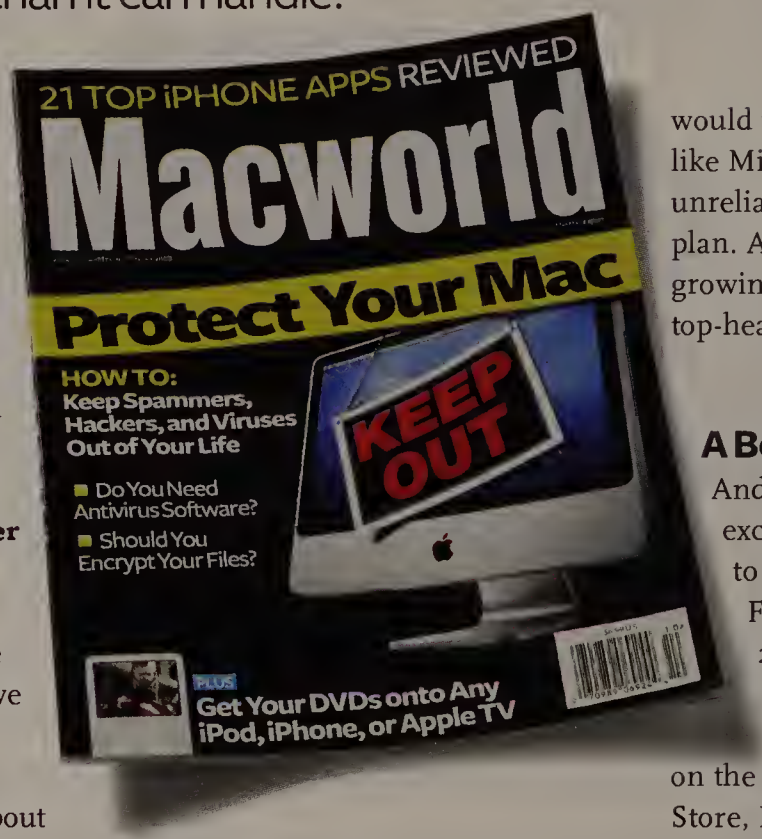
Apple's Growing Pains

Is Apple taking on more than it can handle?



Quality or Quantity?

Apple should stay small and focused ("Know Your Limits," *From the Editor's Desk*, October 2008). I'm not at all concerned about the company's eclipsing Microsoft in market share. I'm much more concerned about Apple losing its well-earned reputation for incredible design while it tries to figure out how to grow.

Ryan Smoker

It's been fantastic watching Apple thrive and gain market share over the past few years. Just about everyone I've talked to has cut Apple a lot of slack regarding its recent missteps in execution—after all, we are talking about issues of timing more than ultimate product quality. Does Apple need to grow and to expand recruitment to do so? Yes, absolutely. This is an industry that worships critical mass, and all eyes are on Apple to step forward to prove what it could do, for example, if one in four new computers sold were Macs.

Charles Gordon

Apple could step up its size and maintain its quality of service at the same time. Many of the jobs at Apple don't require a great deal of experience, only adequate training. The server downtime problem with MobileMe and the iPhone update could have been solved (for the most part) by having lackeys install more servers and possibly buy more proxy connections for the users to redirect to.

Christopher Maunder

Apple shouldn't get bigger. It represents the alternative. It's like the small private schools that are innovating and keeping public schools on their toes. Getting bigger is fiscally unsound. It should do what it is doing now, do it very well, and be careful not to try to bite off more than it can chew.

William Eccles

It seems to me that some of Apple's greatest products have come from when it was a "small" company. The iPod started way before Apple became an international success, and the same thing goes for the Mac operating system. Getting as big as Microsoft would ultimately make Apple exactly like Microsoft: malfunctioning, unreliable, confusing, and without a plan. Apple is a solid company, and growing any more would make it top-heavy and would result in a fall.

Dan Edwards

A Better Book

Andy Ihnatko makes a lot of sense, except that the technology he refers to is already here ("Reading Is Fundamental," *Spotlight*, October 2008). I've been using eReader (www.ereader.com) since the Palm T2 and was waiting for it on the iPod Touch. Now, with the App Store, I have it. I can download books directly to the iPod. I love how I can now can carry a bunch of novels with me. I've read e-books on planes, trains, waiting for a meeting, and on breaks. It would be great if there were more books available in the e-book format.

Floyd Fisher

Although a touch with a slightly larger screen might be useful, the current iPhone size is perfectly adequate for reading. The idea that a usable e-book reader must have a display as big as a regular book is simply not true. E-books shouldn't try to ape the old technology (that's what's wrong with most of the dedicated book readers—they're too big, too expensive, and too functionally limited, all because they're trying to be "just like a regular book"). They need to sell themselves on the advantages they have over dead-tree books—and being a small, pocket-size reading device is one.

dshan

The iPhone is absolutely perfect for reading e-books. Having my library in

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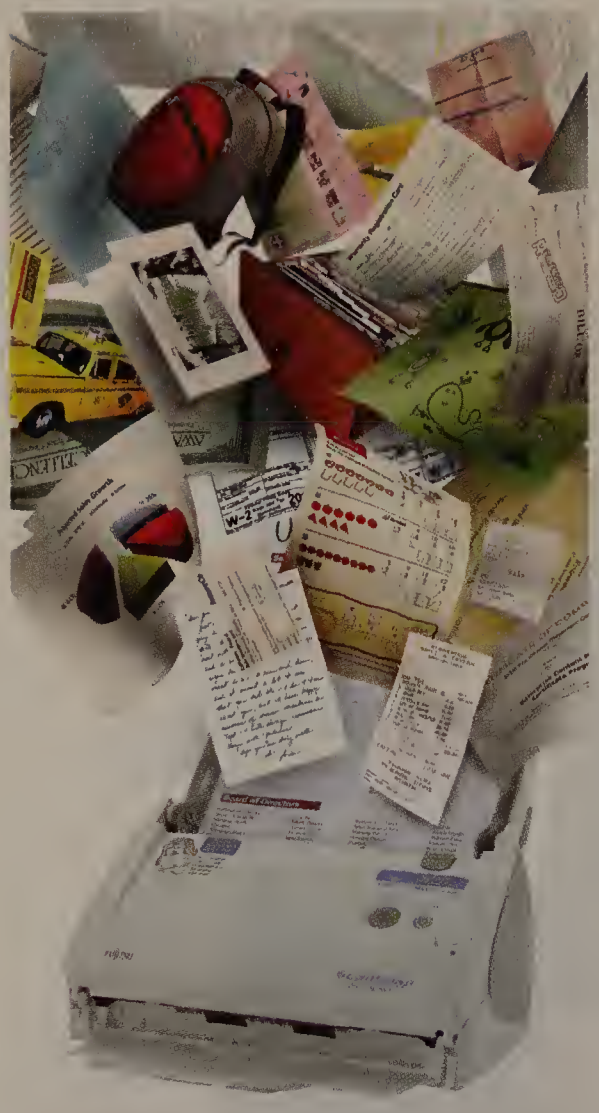

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my pocket while traveling is great. I'm using Stanza (free at the App Store), but I would like to see Apple take a stab at it and sell books in iTunes. I could even see renting books as you do movies, as a bold way to introduce this.

etn4

App Store Stumbles

My biggest problem with the App Store is that most of the applications are lame or are one-trick ponies ("App Store Update Woes," *MacUser,* October 2008). I want to see some of the old Palm programs ported to the iPhone. How about some real productivity apps, like databases, a decent outline program, or medical textbooks? What passes for a productivity or business app in the App Store amazes me. As long as most of the apps are games, the iPhone will continue to be viewed as nothing more than an expensive toy.

NCamilo

As an iPhone developer, I can reiterate these frustrations. Apple is approving and pushing out new apps in less than 48 hours, while updates to current apps are waiting many days. Adding a new app of mine took Apple just over 24 hours to approve. However, a minor update to another app has now been sitting in Apple's queue for 13 days. An important update to the second app has been "pending review" for nine days. Important updates sit, while the App Store fills with new applications.

Pelted

Office Spaced Out

I use both versions of Office ("Office 2008 Survival Guide," *Working Mac,* October 2008). I far prefer the older, more powerful Office 2004, but it is not completely compatible with Leopard—the keyboard and mouse intermittently freeze until you click once on another application. This problem (confirmed by Microsoft as a Rosetta bug) is so annoying that when I don't need power, I use the new, dumbed-down Excel.

Don Frank

Missing MMS

Your review failed to address one of the biggest shortcomings of the iPhone: lack of MMS, or Multimedia Messaging Service ("iPhone 2.0," September 2008). MMS messages have to be viewed on the Internet via AT&T's Web site. I haven't heard of any plans to address this issue. To me, this seems like even more basic functionality than Exchange support.

Chris Stuard

I've been using the iPhone camera to capture my new baby, and it's been great because it's portable and simple. No need to worry about settings—just turn it on, compose, and shoot. I agree it's not the best quality, but it gives great results compared to my other camera phones. I've taken more baby photos with my iPhone than my Canon SLR.

nzmacguy

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ILLUSTRATION BY ERIC STURDEVANT

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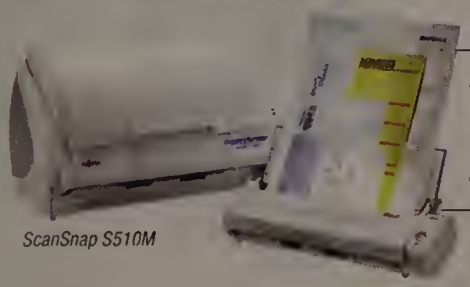

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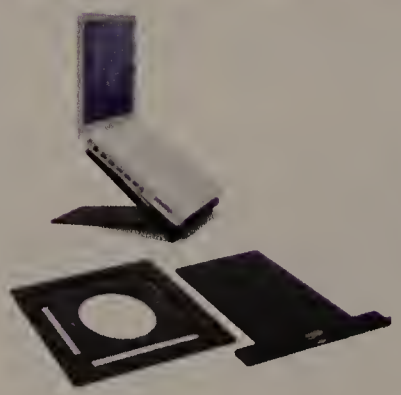

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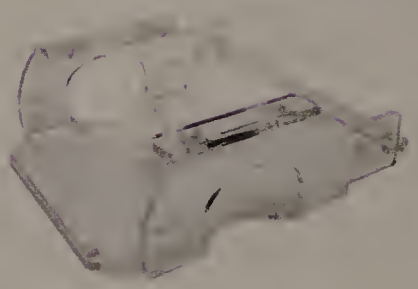

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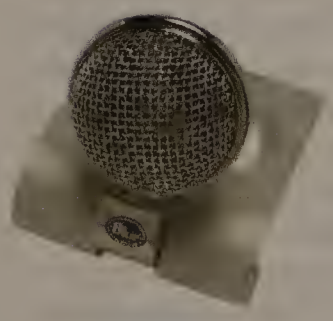

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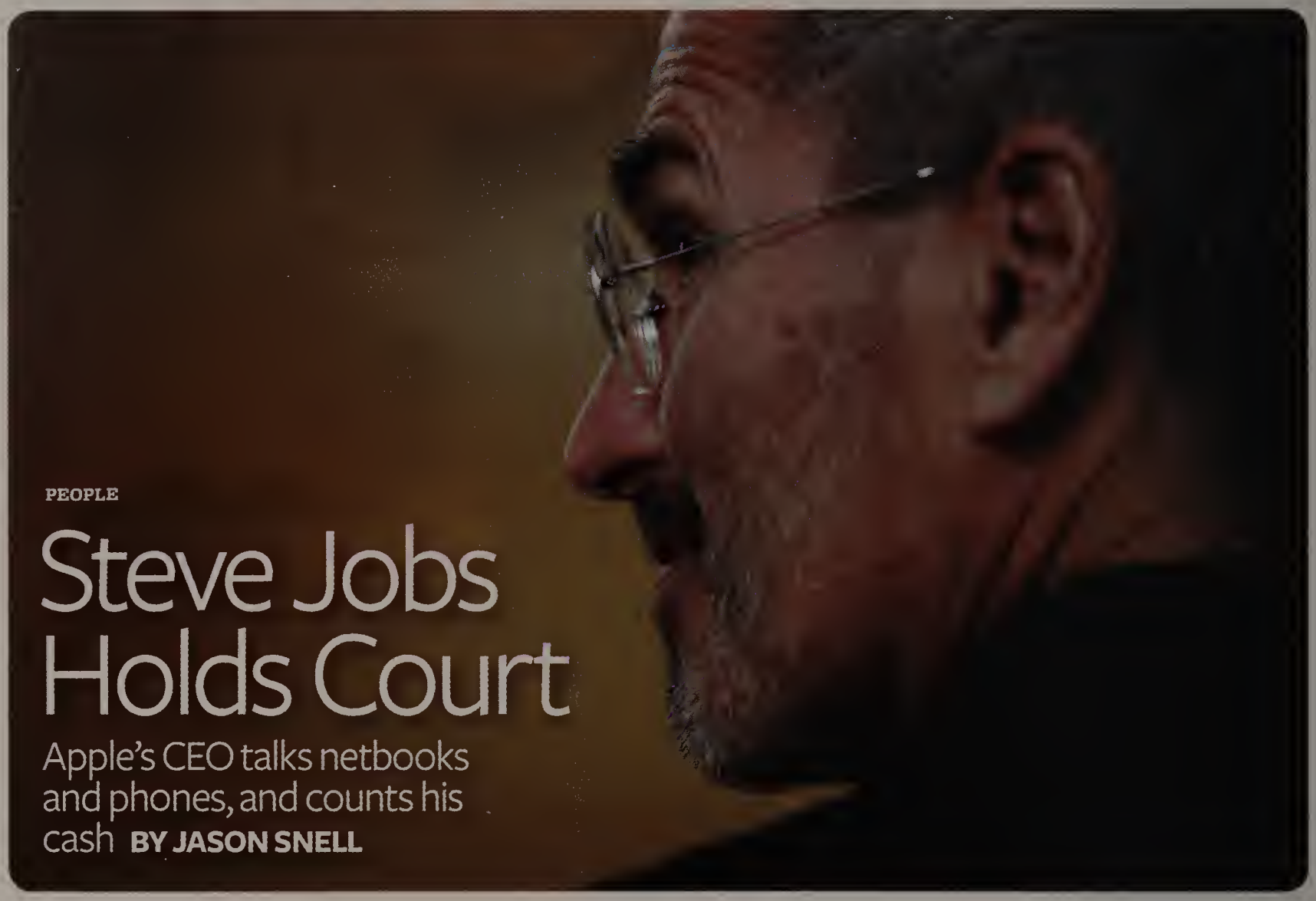

PEOPLE

Steve Jobs Holds Court

Apple's CEO talks netbooks and phones, and counts his cash

BY JASON SNELL

Apple is doing pretty well these days. For its fiscal fourth quarter, the company reported a $1.14 billion profit. Apple shipped 2.6 million Macs, a 21 percent unit growth and 17 percent revenue growth over the year-ago quarter. Those 2.6 million units represent the most Macs Apple has sold in a quarter—the fifth time Apple has shattered that record in the last six quarters. The company also sold more than 11 million iPods and 6.9 million iPhones in that same period (Apple broke its self-imposed goal of selling a total of 10 million iPhones in 2008 by the time the company announced its earnings in October).

But perhaps the most interesting thing about that last quarter is the fact that CEO Steve Jobs appeared on Apple's financial-results phone call as a surprise "special guest." And he held court, making some scripted pronouncements, parrying with questioning analysts, and offering enough vague tidbits to whip Apple Kremlinologists into a frenzy.

Among the biggest issues Jobs addressed was the ongoing global financial climate. Jobs opened by saying, "Some remarkable things are happening at Apple, but everything is set against this remarkable economic slowdown." Later, he said, "We are not economists. Your next-door neighbor can likely predict what's going to happen as well as we can."

But in general, Jobs was about as optimistic as he could be about Apple, given the global economic conditions. He said that Apple customers are the "smartest, most product-aware customers in the market." While they may postpone purchases, he said, they're unlikely to abandon Apple and would more likely just delay purchases rather than switch to a competitor.

More important, Apple's cash reserves—the company has almost $25 billion dollars in the bank, and is free of debt—will help the company invest its way through the downturn and emerge with better products and a stronger position relative to its competitors, as it did during the last economic downturn.

One analyst suggested that Apple could use the cash to buy back its own stock, but Jobs intimated that the money would be better used for funding R&D and perhaps even acquiring other companies or talented employees. Or even better, much of it could remain as a safety cushion. "[The cash] isn't burning a hole in our pocket," he said.

iPhone

More than the economy, though, I suspect Jobs was on the call to crow about Apple having sold more phones in the last quarter than its rival, Research in

PHOTOGRAPH BY SEAN GALLUP/GETTY IMAGES

Motion (RIM), the maker of the BlackBerry series of smart phones used widely in the business world. But rather than simply gloating, Jobs actually sounded surprised and impressed by the news, and even paid RIM a compliment regarding the quality of its products.

"Apple beat RIM," he said. "In our most recent quarter, RIM sold 6.1 million BlackBerry devices, compared to our 6.9 iPhones. Apple outsold RIM last quarter, and this is a milestone for us. RIM is a good company that makes good products, and so it is surprising that we could outsell them in any quarter after only 15 months in the market."

Jobs went on to point out that, purely in terms of revenue (rather than units sold, since the iPhone is more expensive than most cell phones in the market), Apple is "the world's third-largest mobile-phone supplier," trailing only Nokia and Samsung. That's amazing, though it's important to remember that this quarter's numbers are fueled in part by the pent-up demand for the iPhone 3G, including its rollout to 50 countries. "There's no guarantee that sustained sales will equal initial sales," Jobs cautioned. "And who knows about the economic slowdown? But the fact is, we beat RIM. Not bad for being in the market only 15 months."

Q&A

For me, the two most interesting Jobs statements came during the question-and-answer period, in which many supposedly sober analysts fell all over themselves to compliment Jobs and ask him some fairly silly questions.

At Apple's event launching the company's new laptops (see page 36 for our reviews of the new MacBooks and MacBook Pros), Jobs was asked about the emerging category of so-called *netbooks*, low-cost and low-feature laptops. At the time, Jobs made skeptical noises about the category, saying it was just too early to tell what would happen. On the earnings call, Jobs went a little further, dangling the suggestion that Apple is watching the category closely: "It's a nascent category and we'll watch while it evolves," Jobs said. "And we've got some pretty good ideas if it does evolve." That last bit should fuel months of endless speculation.

Jobs had another interesting response on the subject of Apple's competitors in the smart-phone space. I'll quote it in full here, because I think it both encapsulates Apple's product philosophy—it's the software, stupid—and manages to take a shot at Google's Android and other phone platforms that will end up on numerous different hardware devices, making it difficult for third-party software developers to really embrace those platforms as they've embraced the iPhone.

"As software becomes the differentiating technology of this product category, people find that a hundred [hardware] variations presented to software developers is not very enticing," he said. "And most companies in this phone business do not have much experience in a software platform business. So we're extremely comfortable with our product strategy, and we approach it as a software platform company, which is pretty different than most of our competition."

"Apple outsold RIM last quarter, and this is a milestone for us."

And yes, one analyst practically begged Jobs to return to making regular appearances on the quarterly financial conference calls. A true showman, Jobs left 'em wanting more—while also complimenting the usual one-two phone-call punch of Apple CFO Peter Oppenheimer and COO Tim Cook.

"Peter and Tim do such a good job that I don't think I could add much," Jobs said. Aw, shucks.

Jason Snell is *Macworld*'s editorial director. Editor at Large **Jim Dalrymple** contributed to this story.

LEGAL

Lawsuit Says PowerBook G4s Are Old and Broken

Look, we don't have anything against older-model Macs: some of our favorite Macs have entered the world of the discontinued. We're all in favor of keeping them running well for as long as possible. But it's unfortunate when you have to go all the way to court to make that happen.

That's just what Giorgio Gomelsky has done, though. The New York resident has filed a class action lawsuit in the Northern District Court of California saying that Apple failed to properly address issues with some PowerBook G4s' defective RAM slots. Apple did acknowledge that some G4s had the problems and subsequently issued a warranty extension—in 2006, Apple debuted what it called the "PowerBook G4 Memory Slot Repair Extension Program" for models made between January and April 2005. But the complainants contend that the range of serial numbers Apple agreed to cover did not extend to all affected units—Gomelsky's included.

The suit is asking for damages, the refunded cost of the PowerBooks, and the attendant costs and fees that come with launching a lawsuit of this kind. Will it pay off for the litigants, or just turn into a long and costly legal battle? We'll have to sit back and see.—**DAN MOREN**

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iPod + iTunes News

Everything you need to know about digital music

Steve Wozniak Thinks the iPod's Days Are Numbered

To be fair, when Apple cofounder Steve Wozniak talks to the press, it's usually a rehashing of the same old, same old. But England's *Telegraph* had an interesting chat with Woz in which he was unusually frank about the future of Apple's most popular devices.

"The iPod has sort of lived a long life at number one," Woz says. "It's kind of like everyone has got one or two or three. You get to a point when they are on display everywhere, they get real cheap, and they are not selling as much."

Sure, technology is constantly evolving, so it's not a question of whether the iPod will die but rather when. But you can bet Apple will have something ready when the time comes.—**DAN MOREN**

iPod Connections Expected in 60 Percent of 2009 Cars

A new study by analysis firm iSuppli says that in 2009, 58 percent of new American cars—that's luxury and low-end models alike—are expected to have iPod integration. So by the time I buy a new car (maybe in the next five to ten years), it's pretty much guaranteed that I'll be able to dock my iPhone—or whatever the future incarnation will be—directly into my car without having to futz around with FM transmitters or auxiliary cables.

Moreover, 82 percent of the same cars will have Bluetooth support for voice calls, according to the same study. Here's hoping that my next ride will easily play both my voice calls and music from my sixth-generation iPhone without a hitch.—**CYRUS FARIVAR**

DADA OFFERS MUSIC AT 66 CENTS PER TRACK

As if there weren't enough third-tier iTunes competitors out there, Italian social networking startup Dada Entertainment (dada.net; half owned by Sony Music) is now offering the entire Universal Music catalog, in addition to the Sony catalog, at two-thirds the price that iTunes does—$10 for any 15 tracks. Furthermore, the company offers over-the-air downloads of DRM-free tracks as music or ringtones. The downside? That $10 is a monthly subscription fee, which gives you a "budget" of songs—and it doesn't roll over to the following month. What part of "number-one music retailer" don't iTunes competitors understand?—**CYRUS FARIVAR**

PRODUCT WATCH

HARDWARE

iDive 300, from H2O Audio (www.h2oaudio.com): iPod case for scuba divers is waterproof to a depth of 300 feet ($350).

Lexmark E260DN, from Lexmark (www.lexmark.com): Monochrome laser printer features 1,200-by-1,200-dpi resolution and 35-pages-per-minute output speeds ($249).

INTERNET

First Look: Netflix Instant Watching for Intel Macs

In January 2007, Netflix brought the ability to watch a limited number of its catalog of movies and TV shows to users of Windows-based PCs—all for free, as a part of an existing Netflix subscription. Now, at last, the company is rolling out support for Instant Watching to the Mac, and I was excited to finally get a chance to play videos within the happy confines of my Mac's Web browser, natively.

The Netflix player (in beta at press time) uses Microsoft's Silverlight technology to play back videos. Since Silverlight works only on Intel-based Macs, Netflix Instant Watching won't work if you're still using a PowerPC-based Mac. (Netflix says that three-quarters of its Mac customers own Intel Macs.) The video content is copy-protected via Silverlight's built-in Play Ready DRM.

When I tried to use Instant Watching on Windows last year, I was frustrated. I had to approve the downloading of various media keys to avoid an error screen that said I had no approval to play back videos. I can't say whether that experience was typical or whether it was complicated by the fact that I was actually on a Mac running Windows in a virtual machine. What I *can* say is, playing back Netflix videos on my Mac using Silverlight was effortless.

Netflix says that there are about 12,000 videos available for Instant Watching today. The video quality itself is a bit soft, but extremely watchable. Nobody will mistake it for high-def, but it still looks pretty good. (Video quality also varies from item to item—some classic British TV shows look downright terrible, and some recent Hollywood films look great.) If you're already a Netflix subscriber, Instant Watching is an excellent supplement.—**JASON SNELL**

PRODUCT WATCH

SOFTWARE

Fission 1.6, from Rogue Amoeba Software (www.rogueamoeba.com): Updated audio-editing software lets users save iPhone ringtones using almost any audio file supported by QuickTime ($32; upgrade, free).

FotoMagico 2.6, from Boinx Software (www.boinx.com): Photo-presentation software adds support for the Adobe Photoshop Lightroom 2 photo-management application ($49; upgrade, free).

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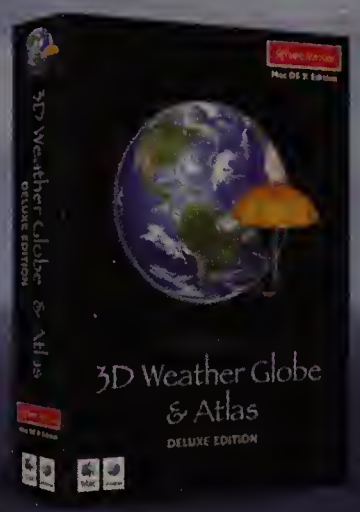

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BUSINESS

Greenpeace Shows a Little Apple Love

With the improvements in the latest MacBook and MacBook Pro models, plus Steve Jobs's recent environmental update on Apple's Web site (macworld.com/4170), Greenpeace is a little more impressed with Apple. In a recent blog post, the organization wrote that the elimination of BFRs and PVC from the Apple product line "will be a first for a computer maker and lays down the challenge to competitors such as HP, Dell, Lenovo, Acer, and Toshiba."

Greenpeace does ding Apple for not completely eliminating PVC and BFRs in the new MacBooks (yes, the current power cables are still using PVC), which apparently puts the laptops on a par with the Sony Vaio. But the organization even goes so far as to say that these changes, in combination with the disclosures on Apple's recycling program and carbon footprint, could boost Apple's ranking on the environmental organization's upcoming scorecard.—**DAN MOREN**

Activity Monitor

Ars Technica questions oft-repeated figures about the real costs of piracy
macworld.com/4171

Forbes rounds up ten Apple flops in a story called "When Apple Failed"
macworld.com/4173

Technologizer argues why a kill switch makes sense for Google's Android, but not for Apple's iPhone
macworld.com/4172

PRODUCT WATCH

HARDWARE

OWC Mercury Pro 4x Blu-ray external drive, from Other World Computing (www.macsales.com): 4x Blu-ray Disc writer features USB 2.0, FireWire 400/800, and eSATA ($500).

SD to CF Adapter, from Delkin Devices (www.delkin.com): Secure Digital to CompactFlash card adapter lets you use SD cards in devices that require CompactFlash ($30).

HARDWARE

The Case for an Apple Netbook

Speaking about an emerging class of ultraportable laptops, Steve Jobs recently said, "We don't know how to make a $500 computer that's not a piece of junk" (see "Steve Jobs Holds Court," page 24, for a more in-depth response to netbooks on his part). Maybe Apple needs to take more of a look around at the rest of the industry, because there certainly are computers in the $500-and-less category that aren't pieces of junk. And Apple could do better than the competition, I'm sure.

I admit that general-purpose computers in the sub-$500 category leave one hankering for more features and horsepower. Generally, you get what you pay for if you're looking for a desktop machine that costs less than $500. And a replacement for the Mac mini, or an LC-style desktop machine, is not what I'm suggesting.

Netbooks—a burgeoning segment of mini-laptops designed for limited use, such as e-mail, Web surfing, and light productivity work—increasingly occupy that category. And Apple is sadly absent from the market (iPhone aside).

Companies including Asus, Hewlett-Packard, Lenovo, and MSI are populating the market with mini-laptops that use low-power processors, integrated graphics, and small screens and keyboards; that forgo optical drives; and that have very limited (or no) expansion capabilities. Many of them eschew hard drives for flash-based storage. This entire market has erupted in a very short time—since the One Laptop Per Child (OLPC) Association's introduction of the XO laptop in 2007. Although these systems aren't effective replacements for a general-purpose laptop, I can't help but imagine that if Apple really wanted to, it could make a netbook that would blow these other companies' offerings away.—**PETER COHEN**

PRODUCT WATCH

HARDWARE

StorCenter ix2 Network Storage, from Iomega (store.iomega.com): Network storage appliance comes in a 1TB or 2TB capacity on two SATA hard drives (1TB, $300; 2TB, $480).

Stylus Pro 7900, from Epson (www.epson.com): 24-inch large-format ink-jet printer features a maximum resolution of 2,880-by-1,440 dots per inch with variable-size droplets as small as 3.5 picoliters ($3,995).

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DISPLAYS

Matte Matters

Although there's much to like about the new MacBook and MacBook Pro models (reviewed on page 36), Apple has made one simple design decision that means I'll never be purchasing one: the glossy screen.

While Apple sees only the upside of glossy screens—bright and vivid colors—I see only the negative—myself. Well, myself and whatever else happens to be above or behind me. All those vivid colors come at a terrible cost in terms of reflection and glare—there are times when the screen is nearly invisible due to the glare from overhead lights or other sources of distraction (people walking by behind you and so forth). Apple fooled me once when the original MacBook came out. I liked the size (still not my ideal 12-inch PowerBook G4 replacement, but close), and I liked the features, so I bought one.

After using it for six months, however, which included a couple of business trips, I sold it and purchased my current 15-inch MacBook Pro with its lovely matte screen. I just couldn't stand the distracting reflections and glare on the MacBook's screen.

So where does that leave me? I guess I'll just continue to use my current matte-screen 15-inch MacBook Pro until it's no longer functional, and then head over to eBay to search for a replacement. I simply cannot bring myself to use a glossy display on a laptop computer when there are better, proven solutions available—solutions that Apple itself offered up until now. Short of resorting to using an antiglare screen cover, I'm afraid I may have purchased my last-ever new portable Mac.—**ROB GRIFFITHS**

By the Numbers

102
Number of days Apple says it took to reach 200 million App Store downloads.

7 YEARS
Age of the iPod on October 21, 2008.

$200,000
Value of electronic equipment allegedly stolen by a Newark Liberty Airport TSA employee.

BUSINESS

Microsoft "Photo Booths" Popping Up Outside Apple Stores?

Microsoft and Apple have traded shots at each other in ads recently (such as the "Bake Sale" spot, pictured), but here's a new tactic. According to reports, the Redmond giant is now putting recording booths outside Apple Stores, asking PC users to make video commentaries about why they're a PC.

Perhaps it's just coincidence: the only one I've seen notice of so far is the installation outside the Bullring store in Birmingham, England. Such videos will likely end up in Microsoft's "I'm a PC" commercials, the latest round of which features user-submitted videos.

So does this mean war? Well, the FAQ on Microsoft's "I'm a PC" campaign Web site says that you can feel free to jump in even if you own a Mac: "A Mac can be a PC too, most notably when it runs Windows Vista."—**DAN MOREN**

UPGRADES

New MacBooks Say Bring On the RAM

Although Apple specifies that "two SO-DIMM slots support up to 4GB" of RAM in the new MacBook and MacBook Pro models, it turns out that the slots are willing to accept a bit more. Memory company Ramjet (www.ramjet.com) discovered that if you slap in a 4GB stick instead of a 2GB stick for one of the pair (for a total of 6GB), your MacBook will both rock and roll.

Thinking of bumping up to 8GB? Think again—it seems that putting in two 4GB RAM modules apparently results in the MacBook or MacBook Pro freaking out like a recent retiree looking at his or her latest 401K statement.—**DAN MOREN**

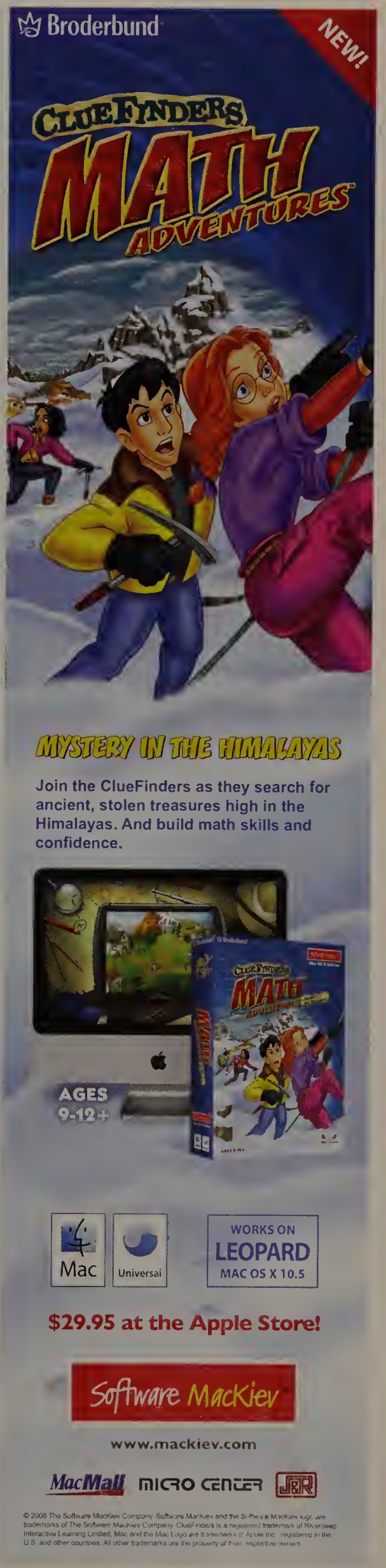
PEOPLE

Sculley Maintains Newton Ahead of Its Time, the Truth Is Out There

Perhaps best remembered as the man who ousted Steve Jobs from Apple in 1985, John Sculley was CEO of Apple from 1983 to 1993, and presided over the inception of products such as the Newton and the port to the PowerPC platform. Asked about the iPhone by TechRadar UK recently, Sculley had this to say:

"Steve Jobs's creative methodology hasn't changed since we worked together 25 years ago. It was, and is, all about 'experience and beautiful design with no compromises.' I don't see any mobile-device company who has figured out how to replicate Steve's design principles."

Sculley went on to say that he still misses a physical keyboard on the iPhone, and that the Newton was ahead of its time but ultimately paid off for Apple.—**DAN MOREN**



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PEOPLE

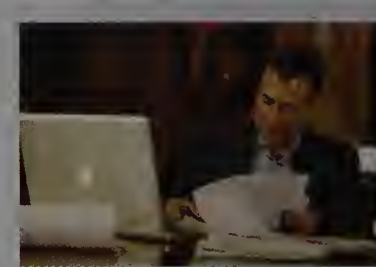
Microsoft's Mac Business Unit Gets New GM

Another year, another general manager for Microsoft's Mac Business Unit. Last year, the MacBU replaced outgoing GM Roz Ho with former AOL Wireless general manager Craig Eisler. But the revolving door continues to, er, revolve, with Eisler moving on to greener pastures at Microsoft's Entertainment and Devices division... which, coincidentally, is where Ho ended up, too.

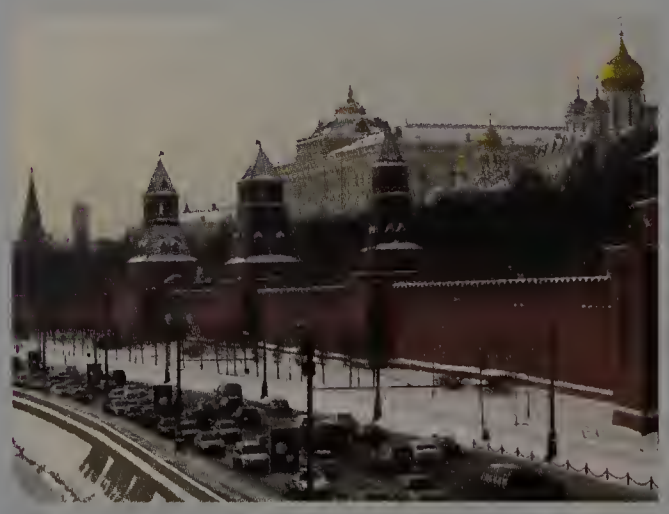
Eisler's replacement is Eric Wilfrid, a 14-year Microsoft veteran who's been with the MacBU since its humble beginnings back in 1997. Previously, Wilfrid was a product unit manager overseeing MacBU engineers; he started at Microsoft working on PowerPoint in 1994 and, after joining MacBU, worked on seven releases of Office for Mac, as well as MSN and Virtual PC. It certainly is tough to doubt his Mac cred. Wilfrid said that the MacBU's current focus is on planning the development of the next version of Office for Mac. Little is known about that version, other than that it will include support for Visual Basic, missing from the current version.—**DAN MOREN**

PEOPLE

He's Probably President of His Local MUG, Too...



Did you know that you have something in common with Russian president Dmitri Medvedev? I refer, of course, to pictures from President Medvedev's latest high-level government meeting where it was revealed that the Russian leader is a Mac user, sporting a brand-new MacBook Pro. This isn't that surprising. We know that Dmitri is a tech nut: he was using an iPhone in 2007, well before they were actually available in his country. And he posts occasional video blogs on his Web site.



Personally, I'm relieved to know that should I ever run into President Medvedev at a state function of some kind and have to dust off my four years of high school Russian, I will at least have something to talk about.—**DAN MOREN**

PRODUCT WATCH

SOFTWARE

CoverScout 3, from equinux (www.equinux.com): Album art finder for iTunes features a new Cover Flow–like interface and adds advanced search and QuickLook support ($40).

ExecutiveSync, from Smith Micro Software (my.smithmicro.com): Synchronization utility features international support and archiving for older deleted versions of files ($30).

GRAPHICS

DisplayPort: The New Game in Town

Along with its latest laptops, Apple introduced a new term to the Mac vocabulary—DisplayPort. The Mini DisplayPort (circled) found on new MacBooks, MacBook Pros, and MacBook Airs replaces the DVI and mini-DVI interfaces found on older models. But will this be another proprietary debacle like Apple's failed Apple Display Connector interface? No. DisplayPort is an open industry standard (although not widely used yet) that has greater bandwidth than DVI does, and it supports High-bandwidth Digital Content Protection. Also, Apple's new 24-inch LED Cinema Display works only with the new connector, so expect to see Apple using it more in the near future.—**PETER COHEN**

iPHONE

Intel to Executives: Lay Off the iPhone

During the recent Intel Developer Forum conference in Taipei, China, two Intel executives described the iPhone as slow and said that the popular handset wasn't able to run the "full Internet" because it uses an Arm processor instead of an Intel chip.

What the executives neglected to say was that Intel doesn't make a comparable chip. Soon after, Intel distanced itself from the criticism in a statement posted on its Chip Shots Web site:

"Apple's iPhone offering is an extremely innovative product that enables new and exciting market opportunities. The statements made in Taiwan were inappropriate, and Intel representatives should not have been commenting on specific customer designs," the statement read.

Intel also admitted that its low-power Atom processor "does not yet match the battery life characteristics of the Arm processor in a phone form factor."—**SUMNER LEMON**

Tech Trends

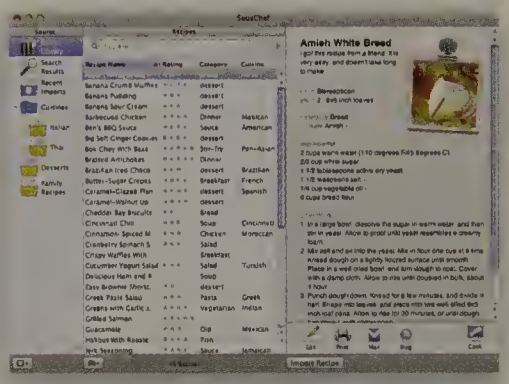
Do iPhones Tie Families Together?

Although some pundits blame technology for breaking up families, a new study found that 25 percent of Americans say their use of the Internet and mobile phones is actually keeping their families closer than when the family members were growing up. Cell phone users are more likely to call their spouses during work, and to call their children daily.—MARYANN JONES THOMPSON

ILLUSTRATION BY CHRIS PHILPOT; PHOTOGRAPH BY PETER BELANGER

Hot Stuff

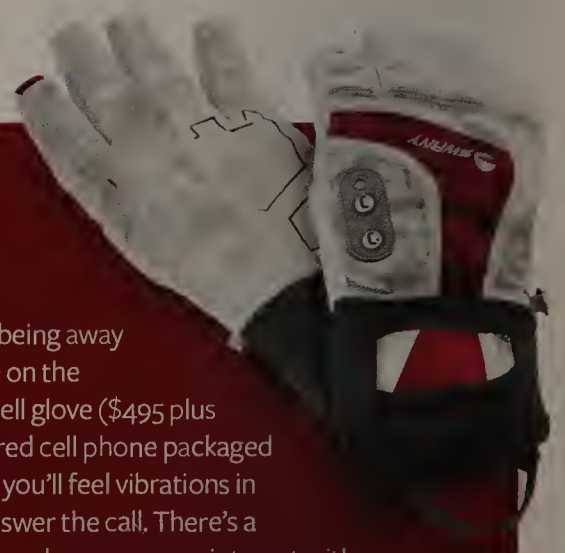
What we're raving about this month



SousChef

Think of Acacia Tree Software's $30 SousChef as a Delicious Library that's extradelicious, because it's all about food. Not only does it store a list of recipes searchable by name, category, and ingredient, it allows you to organize and rate them. There's a full-screen cooking mode, which displays the ingredients and instructions in high-contrast large print, making it easy to follow the instructions from across the room, and you can scroll using an Apple Remote or via speech recognition. But the real joy of food is sharing it, and SousChef excels in this area, letting you share recipes with other SousChef users, as well as mail, print, or blog about your recipes. It will even let you import recipes from the Web, intelligently integrating them into your library (www.acaciatreesoftware.com).—**DAN MOREN**

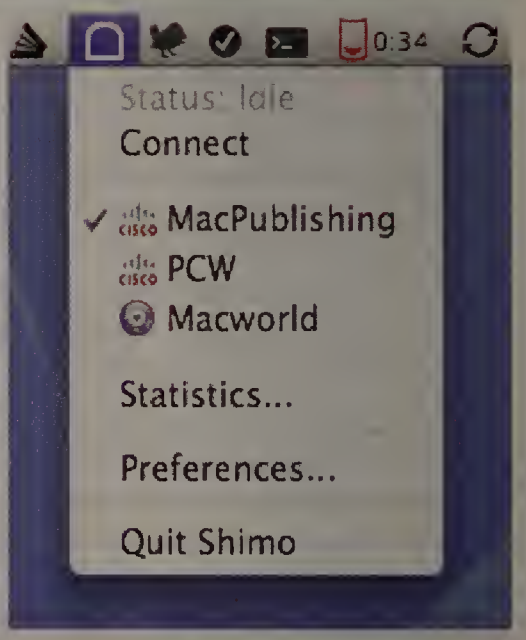
g.cell Bluetooth Glove



For those of you who can't stand the thought of being away from a cell phone at any time—even while you're on the slopes—Swany has a solution for you. Its new g.cell glove ($495 plus cell service; available in early 2009) is a full-featured cell phone packaged within a serious ski glove. When the phone rings, you'll feel vibrations in your wrist; a push on the back of the glove will answer the call. There's a speaker and integrated microphone in the glove's palm, so you can interact with your caller by simply holding your glove up near your mouth and speaking (very Maxwell Smart). But please, for the sake of the other skiers (and the safety of nearby trees), stop skiing before you speak into the glove (www.swanyamerica.com).—**ROB GRIFFITHS**

Dropbox

Keeping files synchronized between multiple computers is tricky. If your needs are modest, consider Dropbox. Just install the client software on your Mac (or Windows box), then create a free 2GB account, and you can synchronize files between multiple computers and the Web with ease. You can upgrade to 50GB for $99 a year (www.getdropbox.com).—**DAN MOREN**



foxL

The diminutive $199 foxL speaker system from soundmatters is just 5.6 inches wide, 2.2 inches high, and 1.4 inches thick. Although a speaker that fits in your hand can't compete with a full-size stereo system, the foxL puts out audio that's shockingly large for its dimensions. The foxL charges via the included AC adapter or your Mac's USB port, and there's a subwoofer output for getting the deepest frequencies. A $249 Bluetooth version adds the ability to stream stereo audio and can function as a Bluetooth speakerphone (www.soundmatters.com).—**DAN FRAKES**

Shimo

Virtual Private Networks may not be sexy, but they get the job done for many people who work in a corporate environment. If you're stuck using Cisco's proprietary client, however, you may miss the convenient menu-bar icon of OS X's built-in VPN client. Fortunately, the $21 Shimo can remedy that. It lets you connect to and disconnect from multiple VPNs from a drop-down menu or via a keyboard shortcut. Version 2.0 even lets you automatically log on to different networks depending on the Wi-Fi network you're joining (www.shimoapp.com).—**DAN MOREN**

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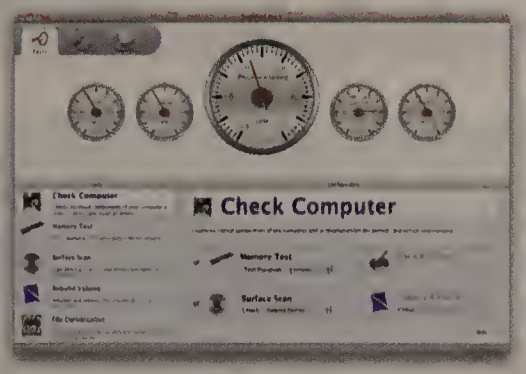

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Ensure that your computer keeps running its best.

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Enhance the overall performance and simplify file layout of your hard drives.

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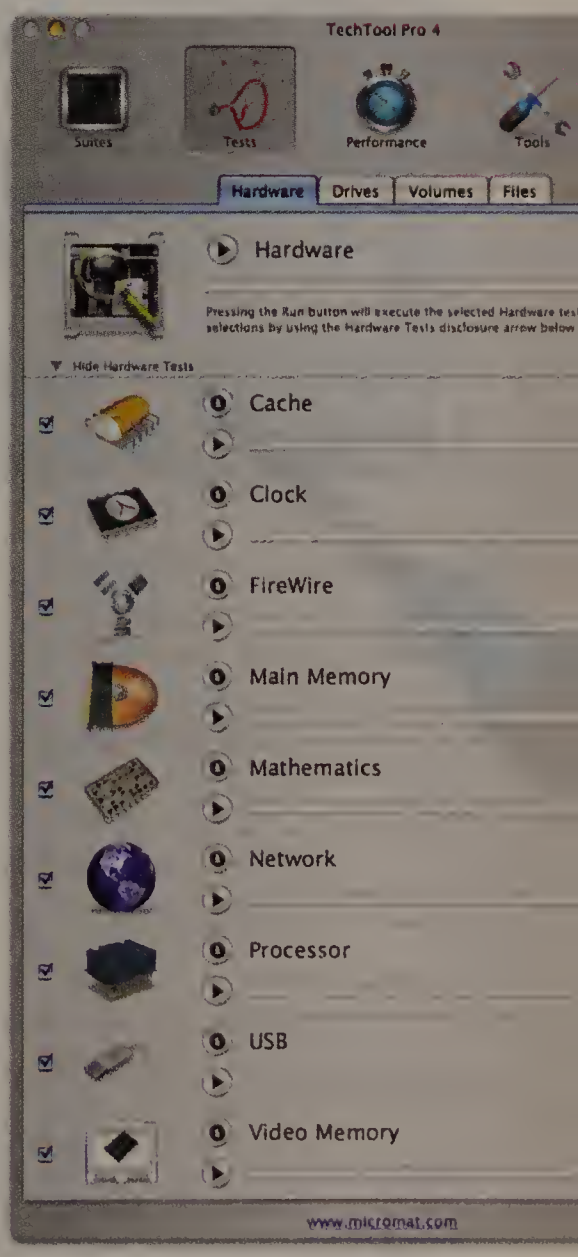

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All Aluminum The updated laptops feature a new design and components that bridge the performance gap between Apple's laptop lines.

MacBook Makeover

Apple's laptops are completely remodeled

BY JACKIE DOVE AND JONATHAN SEFF

The latest versions of Apple's consumer and professional laptops—the MacBook and MacBook Pro, respectively—mark a giant leap in laptop design, compared with the baby steps of earlier updates. With changes inside and out, these latest laptops present a new mobile-computing experience.

What's Inside

All of Apple's laptops use Intel Core 2 Duo (Penryn) processors. There are two new MacBook models: a 2GHz one that comes standard with a 160GB, 5,400-rpm SATA hard drive; and a 2.4GHz one that includes a 250GB drive of the same speed. The MacBooks use 3MB of shared Level 2 cache and have a 1,066MHz frontside bus, up from 800MHz in the previous MacBook iteration. The standard RAM configuration is 2GB of 1,066MHz DDR3, which is faster than the 667MHz DDR2 RAM in the previous MacBook.

Of the two MacBook Pro models, the 2.4GHz one is configured like the 2.4GHz MacBook, with 3MB of shared L2 cache; 2GB of 1,066MHz DDR3 memory; and a 250GB, 5,400-rpm SATA hard drive. The 2.53GHz model comes with 6MB of shared L2 cache; 4GB of 1,066MHz DDR3 memory; and a 320GB, 5,400-rpm SATA hard drive. Both MacBook Pro models have a 1,066MHz frontside bus.

All of the MacBooks come standard with 802.11n and Bluetooth 2.1 + EDR (Enhanced Data Rate) wireless networking, Gigabit Ethernet, audio line-in and -out ports, a pair of USB 2.0 ports, and an 8× slot-loading SuperDrive. The MacBook Pro has an ExpressCard/34 expansion slot; the MacBook does not. Also missing from the MacBook is FireWire (see "Furor over FireWire"). The MacBook Pro has one FireWire 800 port. With all of Apple's laptops, a

New Mini DisplayPort All new Apple laptops use the Mini DisplayPort (above, located between a USB 2.0 port and the minijack for optical digital and analog output) for connecting an external display. You'll need an adapter to connect the Mini DisplayPort to VGA or DVI ($29 each) or to a dual-link DVI ($99).

128GB solid-state drive is available as an option in lieu of a hard drive.

Unibody Design

The new laptops sport what Apple calls a "unibody" enclosure constructed out of a single piece of recyclable aluminum. According to the company, this eliminates the need for fine-tuning parts and diminishes the possibility of construction failures.

With the MacBook, Apple ditched the polycarbonate case, and the result is a sleeker, more rounded design; when closed, the new MacBook looks very svelte, even though it is only 0.13 inch thinner than its plastic predecessor. It's also half a pound lighter than the previous MacBook, which weighed five pounds; the difference is definitely noticeable and makes the MacBook just a little more portable.

The 15-inch MacBook Pro chassis is slightly larger than that of Apple's previous professional laptop (14.3 inches across compared with 14.1 inches). The case is also a tad wider, though it's a shade thinner and more rounded at the edges. It's also about one ounce heavier, but nothing you'd notice if you simply lifted it.

Glossy Screens

Open up a new MacBook or MacBook Pro, and you'll find a bright, glossy, widescreen, LED-backlit display. Resting over the face of the display is a piece of glass with a black mask that replaces the bezel of old (the overall black-and-silver color scheme gives the MacBook a strong visual kinship with the iMac).

The MacBook has a 13.3-inch screen with a native 1,280-by-800-pixel resolution. The MacBook Pro has a 15.4-inch screen with a native 1,440-by-900-pixel resolution. Compared with the screens on the previous Apple laptops, the new backlit LEDs are thinner, brighter, and more power efficient.

But while we found the displays quite dazzling, many Mac consumers have one point of contention concerning them: there's no matte option available with the new MacBook design. Some users complain about seeing reflections in glossy screens that interfere with usability. Others lament the glare coming off the glass. Still others say glossy displays are unfit for high-end color work in graphics or video. Whether or not you like a glossy screen is a personal preference, but the backlit LED display is very bright, which tends to mitigate glare and reflectivity. Also, with a laptop you can adjust the angle and position of your computer to overcome many potential problems. But the lack of a matte option (the last MacBook Pro did have such an option) is a deal-breaker for many users.

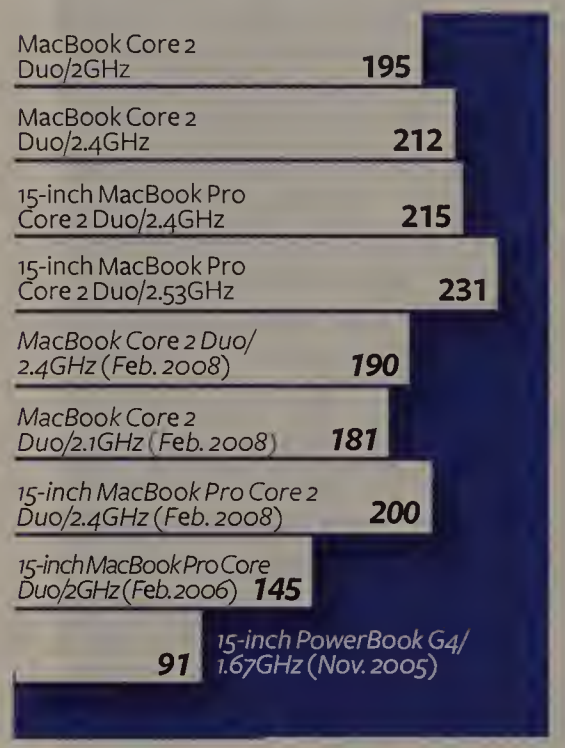
Trackpad and Keyboard

You may not be able to tell by touching it that the trackpad on the new laptops is a piece of glass coated with a textured material to match the look (but not the feel) of the aluminum laptop body. It's smoother than the case, and your fingers glide easily across it, but it has enough texture to give you some traction.

There is no button below the trackpad; the entire pad acts as a button, and you can feel the trackpad depress as you push your finger on it to click. This all-in-one design allowed Apple

Macworld Lab Test

Speedmark 5 Test Results



Longer is better. Reference systems are in *italics*. Speedmark 5 scores are relative to those of a 1.5GHz Core Solo Mac mini, which is assigned a score of 100. All systems were running Mac OS X 10.5.5 with 2GB of RAM, except the 15-inch MacBook Pro Core 2 Duo/2.53GHz (4GB of RAM).—MACWORLD LAB TESTING BY JAMES GALBRAITH, CHRIS HOLT, AND JERRY JUNG

Thinner Profile Made from a single slab of aluminum, the MacBook's new unibody enclosure allows for a thinner, lighter, and stronger Apple laptop.

PHOTOGRAPHY BY PETER BELANGER

Maximize the Power of Photoshop, Lightroom 2 and Aperture 2.1

NEW
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Genuine Fractals 5
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Genuine Fractals 6
The Industry Standard for Image Enlargement

PhotoFrame 4
PhotoFrame 4
The Professional's Choice for Border and Edge Effects
NEW

PhotoTools
NEW
PhotoTools 2
Instantly Give Your Images the Professional Look

Mask Pro 4
Mask Pro 4
Complete Collection of Masking Tools

FocalPoint
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PhotoTune 2
Professional Color Correction Made Easy

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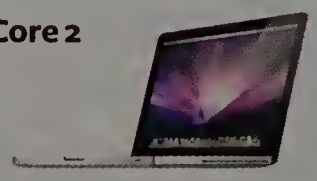
Large Trackpad The new trackpad is made of glass and has no separate button—the entire pad is a button. The trackpad also supports Multi-Touch finger gestures.

to make the trackpad larger overall on both the new MacBook and the new MacBook Pro. The tactile feedback that you get when you press down to click is very helpful, although the new trackpad takes some getting used to. Also, it seems to take a little more force to press down the larger trackpad than it did to press the separate button of old.

The new trackpad also supports Multi-Touch (this feature was available on the previous MacBook Pro as well), which gives users access to the kinds of multifinger gestures popularized by the iPhone; you can view demonstration videos of the Multi-Touch feature in the new Trackpad pane in System Preferences. For example, you can rotate images with a twist of your fingertips, scroll through photos with three fingers, and more. New four-finger gestures let you engage Exposé or bring up OS X's Application Switcher. You can also designate the bottom left or right corner as a right-click. Once you learn and get used to these gestures, they can save you time and cursor movements.

MacBook Core 2 Duo/2GHz



PROS: Sleek new design; easier to service and upgrade; greatly improved graphics power; Multi-Touch glass trackpad; bright LED display; ecologically conscious in design and energy use.

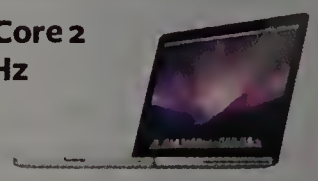
CONS: Entry price higher than before; trackpad button can be hard to press; no FireWire port; disappointing battery life; no video adapters or Apple Remote in the box; no matte-screen option.

PRICE: $1,299

COMPANY: Apple, www.apple.com

FULL REVIEW: macworld.com/4061

MacBook Core 2 Duo/2.4GHz



PROS: Sleek new design; easier to service and upgrade; greatly improved graphics power; Multi-Touch glass trackpad; bright LED display; backlit keyboard; ecologically conscious in design and energy use.

CONS: Price for top model higher than before; trackpad button can be hard to press; no FireWire port; disappointing battery life; no video adapters or Apple Remote in the box; no matte-screen option.

PRICE: $1,599

COMPANY: Apple, www.apple.com

FULL REVIEW: macworld.com/4061

Power Shortage

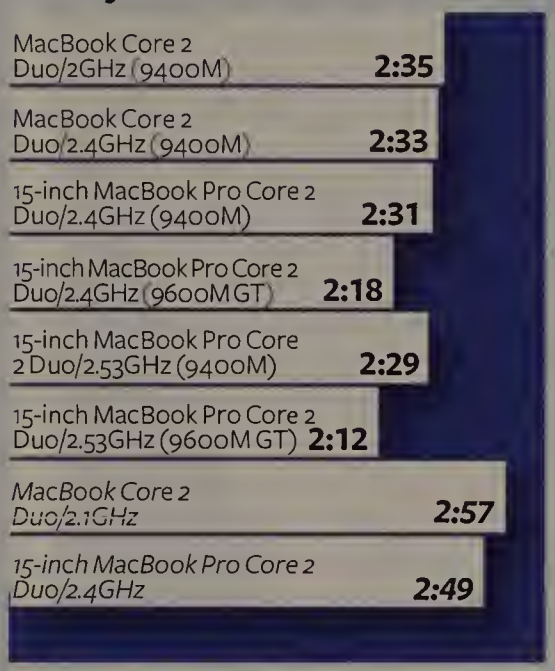
To test the new MacBooks and MacBook Pros for battery life, we performed a battery-drain test by watching a movie clip saved to the laptop's hard drive. We played the movie at full screen, with the screen brightness set to maximum. We played the movie repeatedly until the battery drained.

The two new MacBooks' battery capacities are comparable to each other. However, our results indicate that the new MacBooks' battery life is about 22 to 24 minutes shorter than that of the older 2.1GHz Core 2 Duo.

With the MacBook Pros set up to use the 9600M GT graphics card (they can switch between the 9400M and the 9600M), the 2.4GHz model lasted 6 minutes longer than the 2.53GHz model. That said, you don't need the better graphics performance of the 9600M GT while watching a movie. Unfortunately, when using the 9400M, the battery life on each MacBook Pro model did not improve much. Compare the battery life of the new MacBook Pro, using the 9400M, with that of the previous MacBook Pro, and the older model comes out ahead.—CHRIS HOLT

Macworld Lab Test

Battery Life



Longer is better. Results are in hours:minutes. Reference systems are in *italics*.—MACWORLD LAB TESTING BY CHRIS HOLT

The Chiclet-style keyboard used on the MacBook now also appears on the MacBook Pro. The black scissor-style keys are similar to those on the previous-generation black MacBook. The keys are easy to type with and have a nice, springy response. We also found the new keyboard on the MacBook Pro more comfortable to use than the previous MacBook Pro's version. The high-end MacBook includes a backlit keyboard—the first to appear in the

15-inch MacBook Pro Core 2 Duo/2.4GHz

PROS: Thin, rounded design; easier to service and upgrade; ecologically conscious in design and energy use; gorgeous, bright, glossy screen; retains FireWire port; Multi-Touch glass trackpad; great new keyboard.

CONS: No matte-screen option; trackpad button can be hard to press; disappointing battery life.

PRICE: $1,999

COMPANY: Apple, www.apple.com

FULL REVIEW: macworld.com/4062

15-inch MacBook Pro Core 2 Duo/2.53GHz

PROS: Thin, rounded design; easier to service and upgrade; ecologically conscious in design and energy use; gorgeous, bright, glossy screen; retains FireWire port; Multi-Touch glass trackpad; great new keyboard.

CONS: No matte screen option; trackpad button can be hard to press; disappointing battery life.

PRICE: $2,499

COMPANY: Apple, www.apple.com

FULL REVIEW: macworld.com/4062

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Black Keys The MacBook Pro no longer uses silver-colored keys on its keyboard. It has the same Chiclet-style keyboard as the MacBook.

MacBook line (the keyboard is backlit on all MacBook Pro models).

Performance

First, let's discuss the new MacBooks and how they performed compared with the older MacBooks they replace. Even though it has a slower processor than the previous MacBooks, the new 2GHz model beat the older 2.1GHz model by 14 points and the older 2.4GHz model by 5 points in our Speedmark 5 test suite. The new 2.4GHz MacBook fared even better.

Now let's take a look at the new MacBook Pros and how they did against the previous generation. The new 2.4GHz MacBook Pro scored 15 more points in Speedmark than the older 2.4GHz model. The new 2.53GHz MacBook Pro turned in the fastest numbers of any standard Mac laptop in every test category. In our Speedmark test, the 2.53GHz topped

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its new 2.4GHz sibling by 16 points and the previous 2.4GHz MacBook Pro by 31 points. Our benchmark tests were run with the high-performance setting (see "Graphics Gains").

A significant performance result to note: The new 2.4GHz MacBook scored only 3 fewer points (a difference of less than 2 percent) than the new 2.4GHz MacBook Pro, which costs $400 more.

Environmental Impact

Apple has received a lot of bad press over the last few years regarding the impact its products have on the environment. At the event where Steve Jobs announced the new MacBooks, he was quick to point out that Apple had put a lot of effort into making its products safer. For the first time, Apple laptops are Energy Star–compliant and they ship with less packaging than before. Apple also reports that it has removed polyvinyl chloride (PVC) and brominated flame retardants from its enclosures, circuit boards, and connectors. The MacBook's aluminum-and-glass shell is highly recyclable, the display doesn't contain mercury, the glass doesn't contain arsenic, the backlit display uses less energy than previous display technologies, and so on. So your conscience needn't be the deciding factor in whether you purchase an Apple laptop.

Furor over FireWire

One thing you won't find on the new MacBook—to the dismay of many users—is a FireWire port. Apple markets the MacBook as a consumer product and says that USB 2.0 is now being used on most consumer devices. And it's true that most hard drives and camcorders now have USB connections (not to mention the fact that iPhones and iPods now charge and sync only via USB).

But for those of you with lots of legacy devices (FireWire-only hard drives, tape camcorders, and audio interfaces, for example), the lack of FireWire on the MacBook will definitely figure into your buying decision. If you need to use FireWire devices with your laptop, the MacBook isn't for you. It's sad that Apple is starting to abandon a technology—one it invented—that has many benefits over USB (drive power and higher actual speeds, to name a few), but like SCSI and ADB before it, FireWire has to give way to newer technologies. In the long run, as people replace their FireWire-based devices with USB-based ones, the omission will become less important. For now, the MacBook Pro is your only portable option from Apple if you need a FireWire port.

Graphics Gains

Another important advancement with the latest MacBooks is the new Nvidia GeForce 9400M graphics processor. Unlike the integrated Intel GMA X3100 graphics in the previous MacBooks, the 9400M has its own graphics processing unit (GPU), giving it a lot more power than the Intel chip. The 9400M doesn't have its own memory, and instead borrows main system RAM—but the MacBook now uses fast DDR3 SDRAM, and the GPU gets 256MB of RAM, a boost from the 144MB that the X3100 used.

In testing, Macworld Lab found that the 9400M is a good graphics chip for fast-paced games like Call of Duty 4: Modern Warfare; its smooth frame rate—close to 30 frames per second—is a drastic improvement on the 8 frames per second of the previous MacBook's Intel GMA X3100.

The new MacBook Pros have two graphics chips: Nvidia's GeForce 9400M and GeForce 9600M GT. The 9600M GT has dedicated video memory; the 2.4GHz MacBook Pro gets 256MB of DDR3 SDRAM, and the 2.53GHz model has 512MB of DDR3 SDRAM. You can switch between the two chips to get either better video performance or longer battery life (see "Power Shortage").

On the new MacBook Pros, the frame-rate performance takes a dramatic leap when you switch from the 9400M to the 9600M GT. In Doom 3, the frame rate nearly triples at 1,280 by 800 resolution. The boost in Call of Duty 4 results in about 20 more frames per second.

Comparing the new 2.4GHz MacBook Pro and its 9600M GT results with those of the previous high-end system—a 2.4GHz configuration with a 256MB Nvidia GeForce 8600 GT graphics card—yields some interesting information. Only in our Doom 3 test at 1,280 by 800 resolution is there a significant gain of nearly 20 frames per second with the new MacBook Pro; with other games we tested, the performance was either virtually the same between the two systems, or the older MacBook Pro was faster by just a few frames.

For more information about gaming performance with the 9400M and 9600M GT, go to macworld.com/4063.

Macworld's Buying Advice

The latest MacBooks are a big improvement over the previous generation, and in many ways they have become a lot more like the MacBook Pro, except that they're smaller. The one major feature missing from the MacBook is FireWire. If you can't live without FireWire, it's time to make the move to a MacBook Pro.

The MacBook Pro has a lot to offer, at exactly the same price as the previous models. The dual graphics card provides flexibility when you're working in graphically demanding applications.

Both new laptop lines are more compact than their predecessors, but their battery life isn't as strong as that of the earlier models. The ultimate deal-killer for some users, however, will be the lack of a matte-screen option. Overall, the sleek new case design, major graphics improvements, power-sipping LED display, and Multi-Touch glass trackpad are strong upgrades to already great computers.

Jackie Dove and **Jonathan Seff** are senior editors for *Macworld*.

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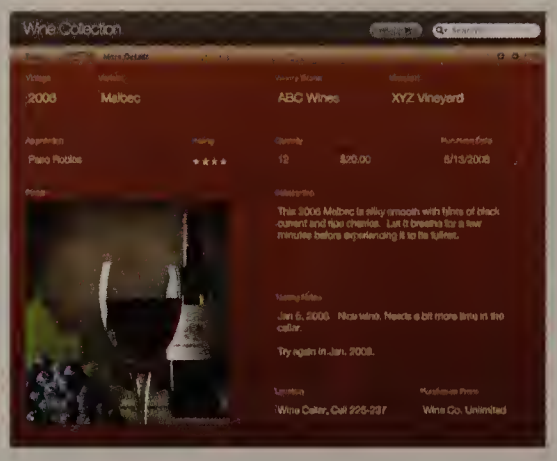
What we're reviewing online this month

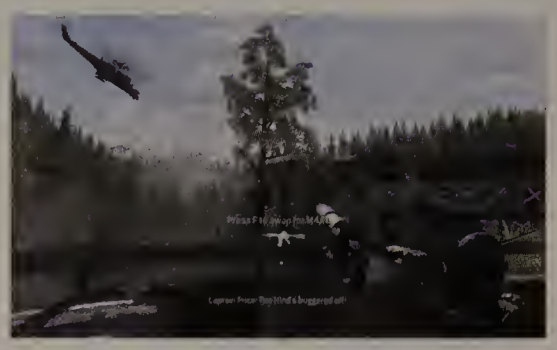


SOFTWARE

Bento 2.0 △

RATING: ●●●●½ **PRICE:** $49 **COMPANY:** FileMaker **URL:** www.filemaker.com

Bento is an easy-to-use database-management system. Version 2.0 boasts a number of significant improvements, including better data import and export, enhancements to the spreadsheet-like table view, on-the-fly customization of forms, and the ability to share libraries. But one of the very best things about Bento 2 is that it now lets you export templates and share them with other Bento users. Bento 2 is a much more mature product than when it was originally released (macworld.com/4065).



Call of Duty 4: Modern Warfare △

RATING: ●●●●½ **PRICE:** $55 **COMPANY:** Aspyr Media **URL:** www.aspyr.com

This first-person shooter draws its influence from Tom Clancy novels, international politics, and the realism of modern warfare. You play as several characters with interrelated stories; the varied missions get increasingly challenging, especially during the later phases of the game. While the game is very linear and the later missions are brutally difficult, the enemy AI (artificial intelligence) is the best we've seen in this type of game. From its visually stunning beginning to its emotionally wrenching ending, this game offers a surprisingly deep, rich, and unique approach to the genre (macworld.com/4066).

Maple 12

RATING: ●●●●½ **PRICE:** $1,895 **COMPANY:** Maplesoft **URL:** www.maplesoft.com

Maple has been providing scientists, engineers, and students with a broad selection of technical computation tools for more than 20 years. With version 12, Maple builds on its strengths as a pedagogical tool. The optional MATLAB add-on toolbox not only provides communication between Maple and MATLAB (a numerical computing environment and programming language), but also allows users to leverage their existing MATLAB code by converting it into native Maple. Maple has improved on the traditional lab-notebook interface, adding interactive components such as dials, buttons, and gauges that let users control and monitor computations (macworld.com/4069).

MediaImpression 1.2

RATING: ●●● **PRICE:** $80 **COMPANY:** ArcSoft **URL:** www.arcsoft.com

This program wants to be a one-stop shop for managing all of your digital media—photos, videos, even music. It does a good job as a media cataloger, thanks to its strong support for image metadata, ratings, and tags. But its audio features are so limited that you would never use it as your primary music player. The main problem with MediaImpression is that it doesn't look or act like a Mac application;

it uses Windows conventions for sorting and viewing files and for navigation. Despite a few neat tricks, such as the ability to correct red-eye on import or to geo-tag photos, a combination of OS X's built-in media browser and Apple's iLife suite will serve Mac users far better (macworld.com/4070).

Spore

RATING: ●●●½ **PRICE:** $50 **COMPANY:** Electronic Arts **URL:** www.ea.com

Last month, we reviewed Spore Origins for iPod (●●●●; macworld.com/3938), a distilled experience of the first part of the Spore game. This month, we review Spore, the highly anticipated new life simulator from game designer Will Wright, the creator of the popular SimCity and The Sims. Spore boldly strives to allow the player to mold not only a creature's appearance, but its evolution from a single-celled organism to an intelligent being capable of conquering the galaxy. Spore is at its best when it lets you construct your creatures with intuitive and easy-to-use tools; you can share your creations on the Spore-pedia Web site, too. In game mode, Spore plays like a real-time strategy

Find It Online

For expanded reviews, type the blue URL at the end of each summary into your browser's address bar.

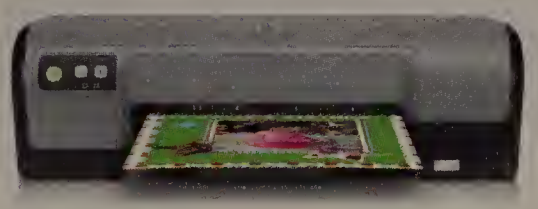
game, but its implementation lacks sophistication. Spore is a comical, beautiful, and surprisingly fun journey that will likely satisfy casual gamers but disappoint fans hoping to encounter a Wright masterpiece (macworld.com/4072).

VisiStat 6.0

RATING: ★★★★ **PRICE:** $30 a month **COMPANY:** VisiStat **URL:** www.visistat.com

VisiStat is a managed service for performing Web-traffic analysis. It integrates with any Web server and provides an easy-to-use interface for generating demographic data for small to midsize businesses and blogs, although it lacks some features found in traditional tools for log-file analysis. To use VisiStat, you must place a special JavaScript tag on every Web page you wish to monitor. VisiStat updates its data continuously, without needing to access Web server logs like other analysis products; visitors show up on the analysis pages with only a few seconds of lag time (macworld.com/4073).

most notable design accomplishment is that it holds all these elements, plus your laptop, while remaining incredibly comfortable and ergonomic. The bag's best feature is that one side is smartly contoured to rest against your body without straining your back. The look of the Contour Balance is simple, like a cross between a diaper bag and a tote. The external microfiber material, available in black or brown, is tough enough to endure heavy use without showing significant signs of wear (macworld.com/4064).



Deskjet D2545 △

RATING: ★★★½ **PRICE:** $45 **COMPANY:** HP **URL:** www.hp.com

The Deskjet D2545 color ink-jet printer is composed of 83 percent recycled plastic; its cartridges are also made from recycled plastic resins. HP claims the D2545 can produce laser-quality black text, but our lab tests reveal that its speed and quality don't meet a laser printer's high standards. The D2545's results on the one-page printout test averaged around 19 seconds, while on the ten-page test it came in at 1 minute and 48 seconds. Our jury awarded the D2545's text quality a Good rating; in comparison, we often find that laser printers produce text worthy of a Very Good or Superior rating. In terms of speed and quality, the D2545 was more on a par with standard multifunctional ink-jet printers than with laser printers (macworld.com/4067).

Eos Wireless iPod Speaker System △

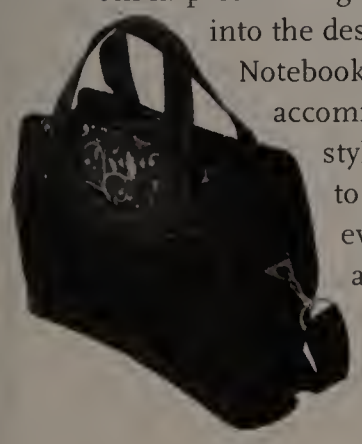
RATING: ★★★½ **PRICE:** $250 **COMPANY:** IntelliTouch **URL:** www.eoswireless.com

This iPod speaker system uses proprietary 2.4GHz wireless technology to transmit audio from your iPod to a remote speaker. The base station looks a lot like many iPod speaker stands, with an iPod dock situated between a pair of tweeters and a downward-firing subwoofer underneath. The remote speaker units hold a pair of tweeters and a subwoofer. We were able to place speakers within 70 feet of the base station; beyond that, we had some transmission problems. Audio quality is clear, with crisp highs, and there's no noticeable static or hum from the wireless transmission. On the other hand, midrange tones were not very warm, and vocals often seemed muted (macworld.com/4068).

HARDWARE

Contour Balance Notebook Case

RATING: ★★★★ **PRICE:** $80 **COMPANY:** Kensington **URL:** www.kensington.com



An impressive degree of thought went into the design of the Balance Notebook Case. It's a large, accommodating, purse-style bag that manages to have a pocket for every imaginable accoutrement without being bulky. However, its

Zi6 Pocket Video Camera

RATING: ★★★★ **PRICE:** $180 **COMPANY:** Kodak **URL:** www.kodak.com

This pocket-size camcorder shoots high definition video, offering 720p resolution at either 60 or 30 frames per second. It also takes still shots at 3 megapixels (interpolated), stores data on SD cards (up to 32GB), and runs off two rechargeable AA batteries. To copy your captured content to the Mac, switch on the camera, flip out the USB connector, and jack it into a free USB 2.0 port. Under the proper shooting conditions (reasonable light and a steady hand, since the Zi6 doesn't have image stabilization), the Zi6's output looks nice. The camcorder's low-light shooting is unimpressive, though, and if your subject is inside at night and located anywhere but near a strong lamp, you'll see some graininess (macworld.com/4074).

App Store Selections

iPhone and iPod touch software that's caught our eye

GAMES

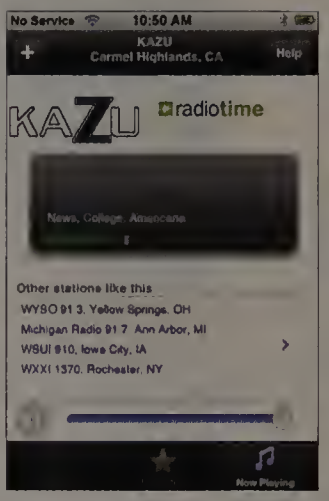
Kroll 1.0

RATING: ♦♦♦½ **PRICE:** $5 **COMPANY:** Digital Legends Entertainment **URL:** macworld.com/4055

Kroll is rooted in the side-scrolling coin-op arcade games of the 1980s. You move from left to right and swing a giant war hammer at your foes. It's not an overwhelmingly challenging game, but it sports a thoroughly modern 3-D engine (macworld.com/4054).—**PETER COHEN**

MUSIC

Wunder Radio



RATING: ♦♦♦♦ **PRICE:** $6 **COMPANY:** Weather Underground **URL:** macworld.com/4048

WunderRadio taps into RadioTime's collection of terrestrial radio content to locate and deliver streaming radio to your iPhone or iPod touch. The interface is a cinch to navigate, making it easy to find radio stations from around the world. Despite some glitches, WunderRadio provides an inexpensive way to access music, news, sports, talk, and weather from an impressive array of stations (macworld.com/4049).—**CHRISTOPHER BREEN**

PRODUCTIVITY

AccuFuel 1.1.2

RATING: ♦♦♦♦½ **PRICE:** $1 **COMPANY:** Appigo **URL:** macworld.com/4053

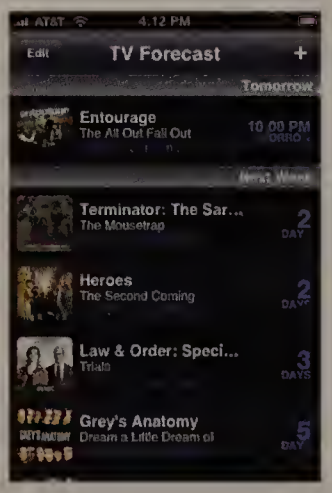
AccuFuel offers a helpful gas mileage summary page and tracking for more than one car. Unlike other trackers, AccuFuel lets you use your car's trip odometer reading instead of the full odometer reading, saving you data-entry time (macworld.com/4052).—**ROB GRIFFITHS**

ENTERTAINMENT

TV Forecast 1.0.1

RATING: ♦♦♦♦ **PRICE:** $3 **COMPANY:** Big Bucket Software **URL:** macworld.com/4050

Select a TV show, and TV Forecast tells you when it's on and what channel you will find it on. You can even e-mail yourself a reminder to tune in and watch (macworld.com/4051).—**DAN FRAKES**



GAMES

Star Wars: The Force Unleashed 1.0.9

RATING: ♦♦♦ **PRICE:** $8 **COMPANY:** THQ Wireless **URL:** macworld.com/4047

It's easy to get excited about Star Wars: The Force Unleashed. Unfortunately, this offering, which follows the exploits of Darth Vader in his battles with Jedi knights, commits the cardinal sin of gaming—it's pretty boring. Some iPhone-specific features are interesting, but there's not enough to keep you coming back for more (macworld.com/4046).—**PETER COHEN**

More Reviews

See more iPhone and iPod touch apps we've tested at iPhone Central (macworld.com/4164)

APPLICATION	DESCRIPTION	PRICE	RATING	FIND CODE*
Instapaper Pro 1.2 Marco Arment	Web page reader	$10	♦♦♦♦½	4056
Maildash 1.2 PureBlend Software	autoreply generator	$3	♦♦♦	4057
Quordy 1.2 Lonely Star Software	Boggle game	$3	♦♦♦♦	4058
Save Benjis 1.2.1 Sol Robots	price tracker	$1	♦♦♦½	4059
Spore Origins Electronic Arts	game	$8	♦♦♦♦	4060

*In a browser's address field, typing in find codes after *macworld.com/* directs you to a product's review or overview. For example, macworld.com/4056 takes you to our review of Instapaper Pro 1.2.

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Mac Universal

Mac Gems

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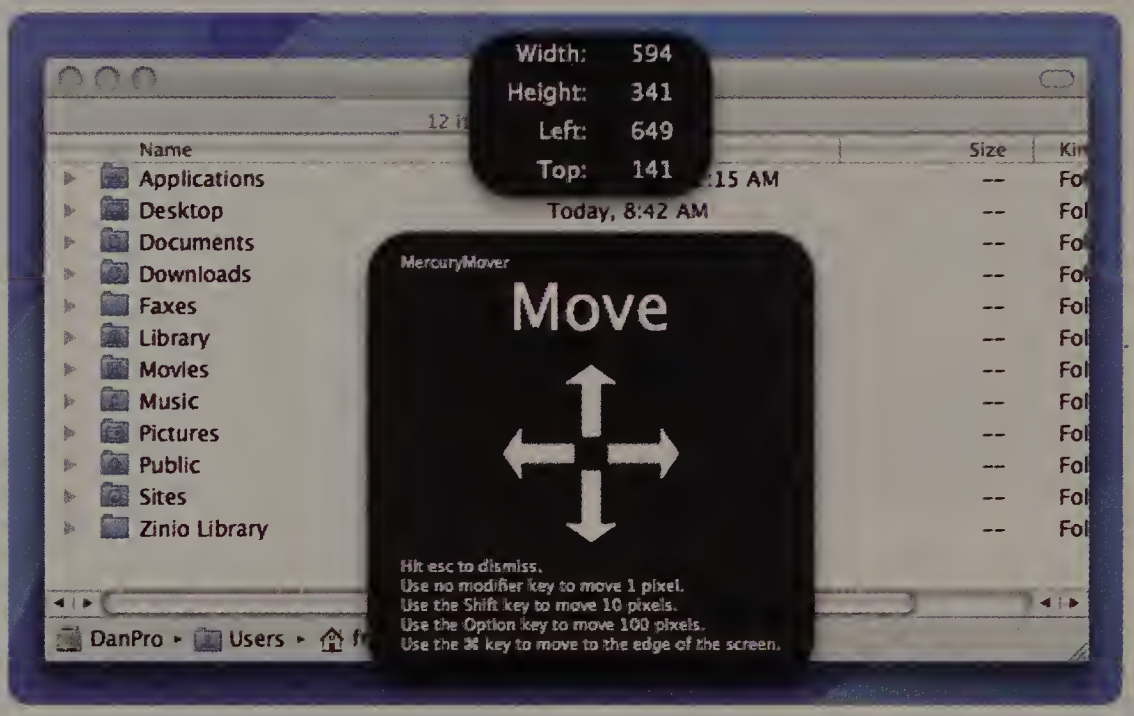

Keyboard Movement MercuryMover lets you move and resize windows without taking your hands off the keyboard.

equal key (=) centers the active window within the screen, and pressing shift along with the plus (+) and equal keys maximizes the window. Unfortunately, there's no minimize shortcut, nor is there a zoom-to-fit shortcut, but there are shortcuts to undo (⌘-Z) and redo (⌘-shift-Z) the last action.

Perhaps my favorite feature is the capability to create shortcuts for particular window sizes, locations, or both. After moving a window to the desired location and resizing it to the desired dimensions, if you activate MercuryMover and then press ⌘-D, you'll see a shortcut dialog box. Type your desired shortcut key and then choose whether you want it to apply the current size, the current position, or both. You can use this new shortcut to resize and reposition any window.

UTILITIES

MercuryMover 2.0

RATING: ★★★★ **PRICE:** $24 **COMPANY:** Helium Foot Software **URL:** www.heliumfoot.com

One of my favorite past Gems is MondoMouse (★★★½; macworld.com/4043), which lets you move or resize any window by holding down a couple of modifier keys and then moving the cursor. But what if you're a keyboard-focused person? Turn to MercuryMover. This useful OS X add-on lets you move and resize the active window using only keyboard shortcuts.

You activate MercuryMover by pressing your desired key combo. This brings up MercuryMover's helpful on-screen display, which shows the size and position of the active window and the available options. Pressing an arrow key moves the active window one pixel in that direction. Pressing shift-arrow moves the window 10 pixels; option-arrow moves it 100 pixels; and ⌘-arrow moves the window all the way to the edge of the screen. Once the window is in the desired location, you press escape to exit MercuryMover. It's a simple and convenient way to reposition a window quickly.

MercuryMover also lets you *resize* windows using similar shortcuts, and it has a few other tricks up its sleeve. In move mode, pressing the

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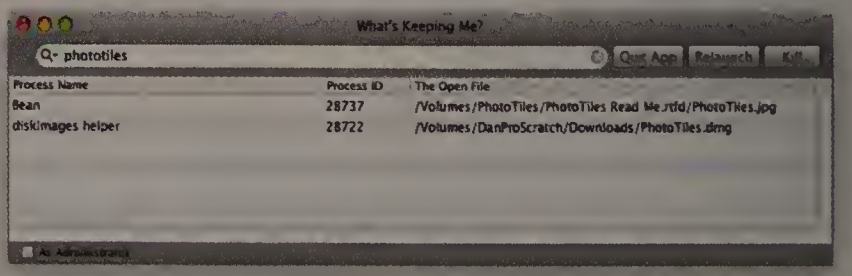
Dan Frakes will be speaking at this year's Macworld Expo, January 5 through 9, 2008, in San Francisco. Register at macworldexpo.com.

UTILITIES

What's Keeping Me 1.3

RATING: ★★★½ **PRICE:** payment requested **COMPANY:** HamSoft Engineering **URL:** www.hamsoftengineering.com

One of the most frustrating issues many OS X users experience is trying to unmount a disk image, hard drive, or network volume, only to have the Finder tell them it can't be done because the volume is "in use"—which means that some OS X process is using one of the files *on* the volume. Similarly, we've all tried emptying the Trash, only to be informed that a file in the Trash is in use.



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- Heather Clancy, ZDNet.com

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Unix pros can use one of several Terminal commands to ferret out the offending file and what's actually using it, but for the shell-shy, What's Keeping Me is a friendlier solution. Just type the name of the volume you can't eject or the file you can't delete, and then press return; after a few seconds, What's Keeping Me displays the open file residing on the volume, or the offending file in the Trash, along with the name of the process or program that's using the file. You can then quit the relevant program to release the busy file.

UTILITIES

WindowShade X 4.2

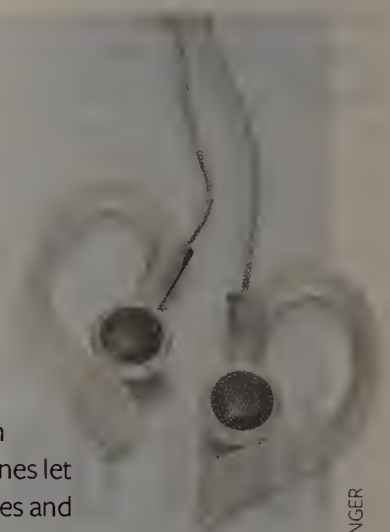
RATING: ♦♦♦♦ **PRICE:** $13.50 **COMPANY:** Unsanity **URL:** unsanity.com

This system-enhancement utility brings back one of OS 9's most popular features: window-shade–style minimizing of windows. With WindowShade X installed, double-clicking on a title bar no longer minimizes the window to the Dock; instead, it rolls up into the title bar, which remains in place. Previous WindowShade X versions have been well received in *Mac Gems*, but Leopard (Mac OS X 10.5) broke the program. Now the developer has finally released a Leopard-compatible version: WindowShade X 4.2.

Headphone Gems

Many people who use Apple's stock iPod and iPhone headphones (see macworld.com/3990) are satisfied with the sound but can't stand the fit. For a better fit, try Innovelis's $9 **BudFits** (pictured; www.budfits.com), simple around-the-ear rubber clips. Snap the stem of each earbud into a clip, and you get a set of headphones that no longer fall out easily and are more comfortable.

If you decide to upgrade your headphones, one popular option is a set of in-ear headphones, which fit inside your ear canals much like earplugs. Because they seal out external noise, these headphones let you enjoy your music at lower volumes than traditional headphones and earbuds; though good ones can be pricey, they usually provide great sound quality. But one drawback is comfort: the ear tips that come with many of these headphones can be uncomfortable. A great alternative is **Comply Foam Tips** (three pairs, $15 to $18; five pairs, $20 to $23; www.complyfoam.com). Thanks to their softer, more breathable foam material, they are more comfortable than the stock tips provided by most headphone vendors and offer a better seal.



PHOTOGRAPH BY PETER BELANGER

Like previous versions, 4.2 offers a standard window-shade mode, as well as three other minimize features: transparency, which makes a window translucent so you can see what's behind it; minimize in place, which shrinks a window to the size of a large icon that you can move around; and hiding, which hides the application to which the window belongs. You can assign a different action to each mode, as well as change the action required to get the standard minimize-to-Dock behavior. For example, on my Mac, double-clicking on the title bar rolls the window up, while control–double-clicking on it makes the window translucent. You can choose the translucency of transparent windows; select the size and behavior of minimized-in-place windows; and set up application-specific preferences so that, for instance, double-clicking on a window's menu bar does one thing in the Finder, another in your favorite Web browser, and yet another in Photoshop.

The minimize-in-place feature isn't currently compatible with Spaces, but WindowShade X otherwise worked well for me. It's a great way to keep windows visible and accessible without blocking your view of other on-screen items.

Transparent Window Views WindowShade X can make your Mac windows transparent so you can see what's behind the current window.

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CAMCORDERS
High Definition

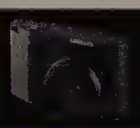
PRODUCT	RATING	PRICE	TYPE	FIND CODE
Vixia HV30 (pictured) www.canon.com	★★★★	$559	MiniDV	3708
HDR-SR11 Handycam www.sony.com	★★★★	$744	hard drive, Memory Stick	3731
Zi6 www.kodak.com	★★★★	$169	mini camcorder	4074

HARD DRIVES
Desktop and Portable

PRODUCT	RATING	PRICE	TYPE	FIND CODE
My Book Studio Edition (pictured) www.westerndigital.com	★★★★½	$198	desktop	3295
G-Drive mini www.g-technology.com	★★★★½	$150	portable	3949
FreeAgent Desk www.seagate.com	★★★★	$170	desktop	4167

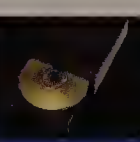
SCANNERS
Document and Flatbed

PRODUCT	RATING	PRICE	TYPE	FIND CODE
ScanSnap S510M (pictured) www.fujitsu.com	★★★★½	$415	document	3321
Perfection V300 Photo www.epson.com	★★★★	$100	flatbed	4071



DIGITAL CAMERAS
Point-and-Shoot

PRODUCT	RATING	PRICE	TYPE	FIND CODE
NV11 (pictured) www.samsung.com	★★★★½	$289	10.1-megapixel	2984
Optio A40 www.pentaximaging.com	★★★½	$155	12-megapixel	4166



DVD BURNERS
Portable and Desktop

PRODUCT	RATING	PRICE	TYPE	FIND CODE
Portable DVD±RW w/ LightScribe (pictured) www.lacie.com	★★★★	$139	portable	3878
d2 DVD±RW w/ LightScribe www.lacie.com	★★★★	$130	desktop	3900

DSLR Camera: EOS REBEL XSi

RATING: ★★★★½ **PRICE:** $635 **COMPANY:** Canon **URL:** www.canon.com **FIND CODE:** 3898

Why We Like It:

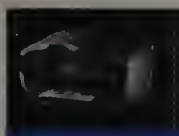
The Canon EOS Rebel XSi produces high-quality images and performs very well in low light. Equipped with a 12-megapixel sensor and a Digic III processor, the XSi is a marked improvement on its predecessor. The XSi also has a compact and light body to complement a superb control layout, a big LCD screen, and a very good 18–55mm kit lens.

Digital SLR Shopping Guide

- Many DSLRs are sold body-only and require that you supply a compatible lens in order to take photos. Others ship as part of a kit that includes a decent-quality multipurpose lens.
- A DSLR is larger and heavier than a point-and-shoot camera, so comfort is key. A camera that fits comfortably in one person's hand may be too large or small in someone else's.
- In addition to offering an optical viewfinder, many "live-view" LCDs now feature the ability to compose shots through the LCD, so it's easier to take overhead shots.

ALSO CONSIDER: **Nikon D40 DSLR**; ★★★★; $425; macworld.com/2498 | **Nikon D300 DSLR**; ★★★★½; $1,900; macworld.com/3434

TOP PRODUCTS are those we've recently reviewed in a comparison of like products. As new products become available, we'll update this list. For longer reviews of these products and for other product recommendations, go to macworld.com/reviews. All prices are the best current prices taken from a PriceGrabber survey of retailers as of November 12, 2008. **FIND CODES:** In a browser's address field, typing in find codes after *macworld.com/* quickly takes you to a product's review or overview. For example, you can find our review of the Nikon D40 at macworld.com/2498.



PRINTERS
Multifunction

PRODUCT	RATING	PRICE	TYPE	FIND CODE
Pixma MX850 (pictured) www.canon.com	♦♦♦♦½	$180	ink-jet	3593
Photosmart C7280 MFP www.hp.com	♦♦♦♦	$194	ink-jet	3581
Stylus Photo RX680 www.epson.com	♦♦♦♦½	$129	ink-jet	3458

PRINTERS
Laser

PRODUCT	RATING	PRICE	TYPE	FIND CODE
C6150dn (pictured) www.okidata.com	♦♦♦♦½	$514	LED; color	3899
HL-4070CDW www.brother-usa.com	♦♦♦♦½	$480	PostScript compatible	3385
Phaser 6180/DN www.xerox.com	♦♦♦♦	$438	PostScript compatible	3057

MONITORS
Wide-Screen

PRODUCT	RATING	PRICE	TYPE	FIND CODE
324 LCD Monitor (pictured) www.lacie.com	♦♦♦♦½	$899	24-inch display	3896
LP3065 Monitor www.hp.com	♦♦♦♦	$899	30-inch display	2509
MultiSync 3090WQXi www.necdisplay.com	♦♦♦♦½	$2,100	30-inch display	3770

PRINTERS
Ink-Jet

PRODUCT	RATING	PRICE	TYPE	FIND CODE
PictureMate Zoom PM 290 (pictured) www.epson.com	♦♦♦♦½	$200	compact; photo	3102
Pixma MP480 www.canon.com	♦♦♦♦	$120	multifunc-tion; photo	4165
Stylus Photo 1400 www.epson.com	♦♦♦♦	$269	large-size photo	2924

APPLE Macs

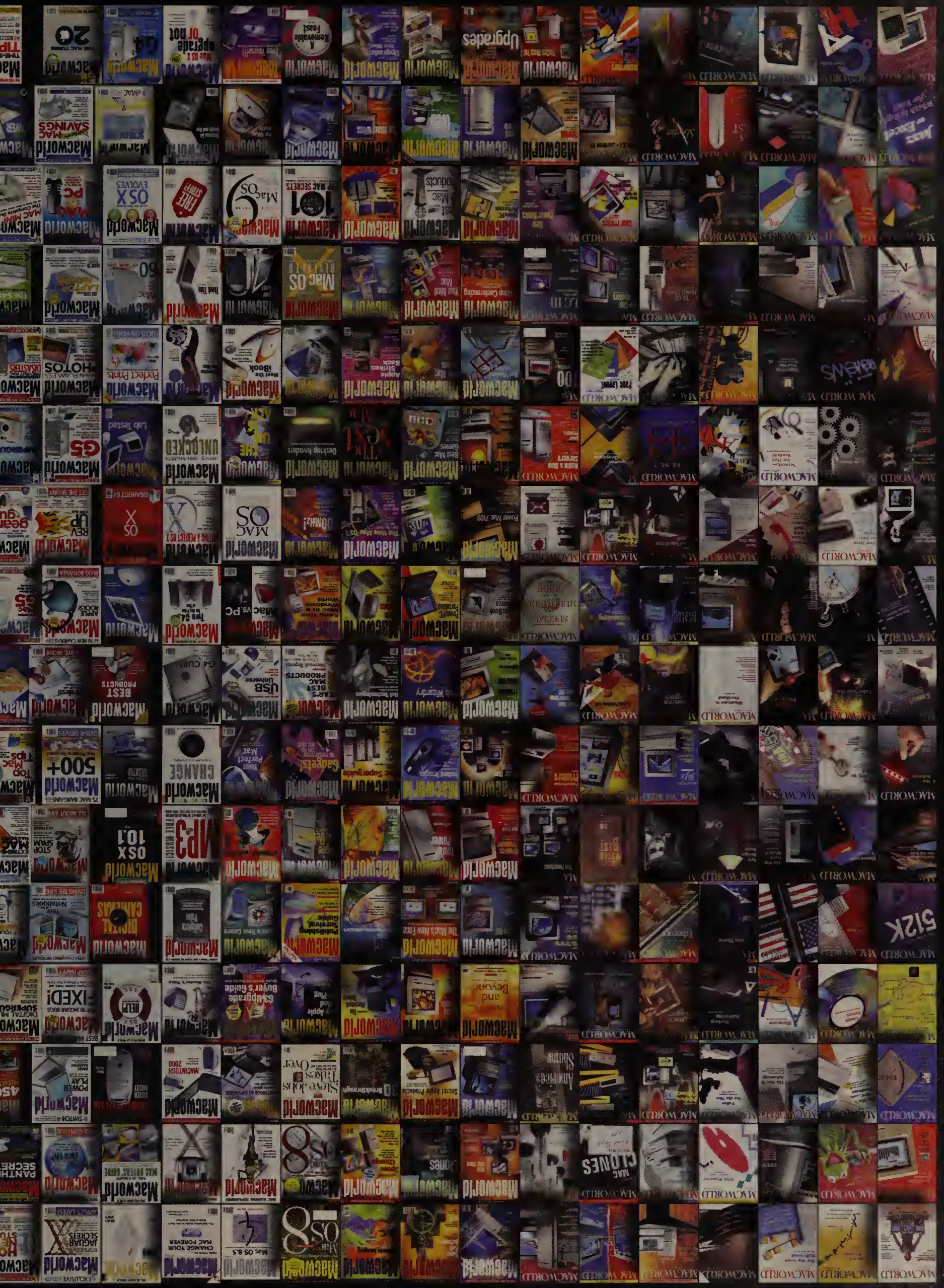
PRODUCT	SPECS	RATING	PRICE	DISPLAY	SPEEDMARK 5*	FIND CODE
DESKTOP						
iMac	Intel Core 2 Duo/2.4GHz	♦♦♦♦	$1,135	20 inches	230	3597
	Intel Core 2 Duo/2.66GHz	♦♦♦♦	$1,419	20 inches	254	3598
	Intel Core 2 Duo/2.8GHz	♦♦♦♦½	$1,704	24 inches	268	3599
Mac mini	Intel Core 2 Duo/1.83GHz	♦♦♦♦	$559	not included	159	3030
	Intel Core 2 Duo/2GHz	♦♦♦♦	$777	not included	172	3031
Mac Pro	Intel Xeon/two quad-core 2.8GHz	♦♦♦♦½	$2,489	not included	314	3363
PORTABLE						
MacBook	Intel Core 2 Duo/2.1GHz	♦♦♦♦	$942	13 inches	180	3464
	Intel Core 2 Duo/2.0GHz	♦♦♦♦	$1,249	13 inches	195	4186
	Intel Core 2 Duo/2.4GHz	♦♦♦♦	$1,588	13 inches	212	4187
MacBook Air	Intel Core 2 Duo/1.6GHz	not yet rated	$1,788	13 inches	N/A	4191
	Intel Core 2 Duo/1.86GHz	♦♦♦½	$2,399	13 inches	174	4192
MacBook Pro	Intel Core 2 Duo/2.4GHz	♦♦♦♦	$1,999	15 inches	215	4188
	Intel Core 2 Duo/2.53GHz	♦♦♦♦	$2,478	15 inches	231	4189
	Intel Core 2 Duo/2.5GHz	not yet rated	$2,645	17 inches	252	4190

N/A = not applicable. * Speedmark 5 is Macworld Lab's standard test tool for benchmarking systems running Mac OS X 10.5 (Leopard). For information on Speedmark testing, go to www.macworld.com/speedmark.

APPLE iPods

PRODUCT	SPECS	RATING	PRICE*	DISPLAY	PERFORMANCE	FIND CODE
iPODS						
iPod classic	120GB	♦♦♦♦	$249	2.5-inch color	36 hours of music playback, 6 hours of video playback	3863
iPod touch	8GB	♦♦♦♦	$229	3.5-inch color	36 hours of music playback; 6 hours of video playback	3864
	16GB	♦♦♦♦	$299	3.5-inch color	36 hours of music playback; 6 hours of video playback	3865
	32GB	♦♦♦♦	$399	3.5-inch color	36 hours of music playback; 6 hours of video playback	3866
iPod	8GB	♦♦♦♦½	$149	2-inch color	24 hours of music playback; 4 hours of video playback	3867
	16GB	♦♦♦♦½	$199	2-inch color	24 hours of music playback; 4 hours of video playback	3868
iPod shuffle	1GB	♦♦♦♦	$34	none	12 hours of music playback	2238
	2GB	♦♦♦♦	$65	none	12 hours of music playback	3470
iPHONE						
iPhone 3G	8GB	♦♦♦♦	$199	3.5-inch color	5 hours of 3G Internet; 5 hours of 3G talk time	4184
	16GB	♦♦♦♦	$299	3.5-inch color	5 hours of 3G Internet; 5 hours of 3G talk time	4185

*iPod shuffle prices are from a PriceGrabber survey of retailers as of November 12, 2008. All other iPod prices are based on direct purchase from the Apple Store.



THE MAC AT 25

On the Mac's silver anniversary, we look at where it's been—and where it's headed next

It seems like only yesterday that *Macworld* released its first issue, with a youthful, besuited Steve Jobs peering over a trio of original Macs on the cover.

OK, maybe not yesterday. But those 25 years seem to have come and gone as quickly as so many Apple CEOs. And that quarter of a century has given us the countless advances and changes—in software, hardware design, operating systems, and more—that make the Mac what it is today.

But that's the old news. What's more important is what your Mac will be like next year, or the year after that, or five years from now. How will Apple's ongoing endeavors and other technological developments affect the devices you use in the near future?

In this article, we take a look at how some of today's trends are driving the technology of tomorrow, as well as how some of the past 25 years' significant events brought us to where we are today. We've also asked some longtime members of the Mac community to share their thoughts on various aspects of the last two and a half decades.

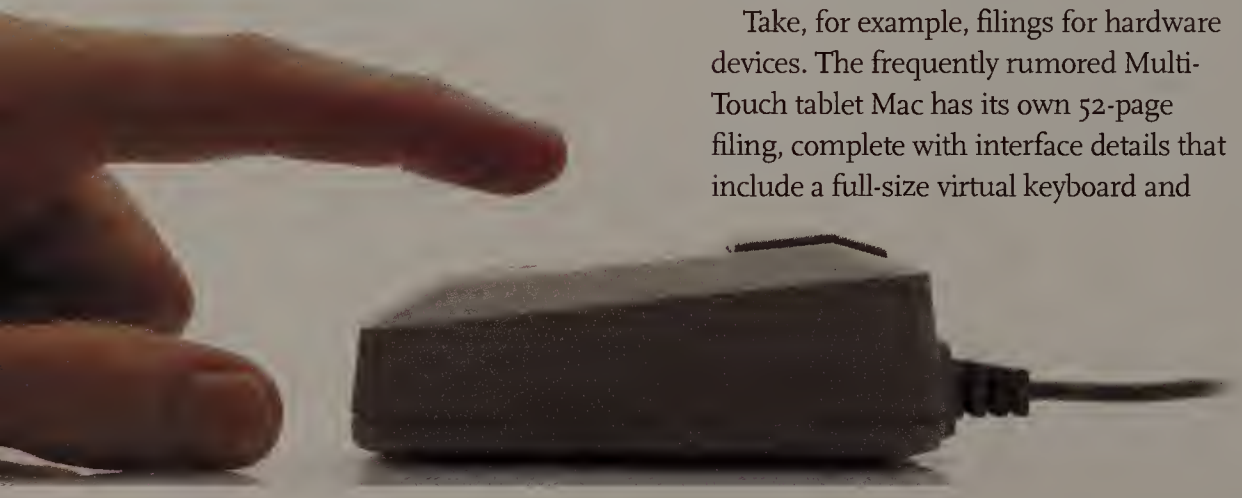
ILLUSTRATIONS BY HARRY CAMPBELL

Interface Design

How interacting with computing devices will change

Ever since Apple introduced the world to the mouse and the window-based graphical user interface in 1984, the company has worked tirelessly to develop a more efficient, yet more powerful, user experience. Witness Apple's many patents.

However, not all—not even most—of those patents will see the light of day. We doubt, for example, that Apple is likely to replace the Mighty Mouse with a new input device based on filing patent #20070152966, titled "Mouse with Optical Sensing Surface," which spends 35 pages detailing a mouse whose entire shapely body is a Multi-Touch display.



Still, although patent spelunking may not be an infallible way to divine exactly what products will emerge from One Infinite Loop, it is an excellent way to gain insight into what's going on in the minds of Apple's development team. A quick look at Apple's most recent filings shows that interface design is clearly a front-and-center concern.

Take, for example, filings for hardware devices. The frequently rumored Multi-Touch tablet Mac has its own 52-page filing, complete with interface details that include a full-size virtual keyboard and resizable interface elements. If you don't want to actually touch your display, Apple also has you covered—with a filing for a proximity-sensing display that can tell not only where and how close your fingers are, but also how fast they're moving toward or away from the display's surface.

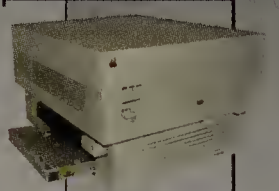
For people who prefer devices with a physical interface, Apple has filed a patent for a keyboard with OLED-display keys that change appearance depending on what you're up to, another for a 3-D remote control that's intriguingly Nintendo Wii–like, and yet another for a holographic display that provides a 3-D experience without geeky glasses.

Some filings seem designed to work together. Take, for example, the intriguingly conceptual "Multi-Touch Data Fusion" filing, which melds a Multi-Touch display with other interface

1984

January 24, 1984
Introducing Macintosh
The revolutionary 128K, 8MHz Macintosh sets the agenda for Apple's next two decades.

March 1, 1985
LaserWriter Breaks Barriers
Apple's early mass-market laser printer becomes a key component in desktop publishing's emergence.



1985

September 13, 1985
Apple Loses Its Core
After losing a boardroom battle for control of the company, Apple cofounder Steve Jobs resigns to found Next.

July 15, 1985
The PageMaker Revolution
Along with the Mac and the LaserWrite Aldus PageMaker 1.0 launches the desktop-publishing revolution.

technologies such as an accelerometer, force sensors, facial-expression detection, eye-tracking, and pupil-dilation and voice-command recognition. Pair that filing with an earlier one for a "Multi-Touch Gesture Dictionary," which assigns different meanings to different hand gestures, and you're headed into a brave new world of computer control—one first hinted at by the four-fingered touchpads on Apple's current laptops.

Most filings are less groundbreaking but still worth noting—for instance, the not-so-euphoniously named "Cursor for Presenting Information Regarding Target," which enables QuickLook-like previews when you move your mouse over file icons and hyperlinks, and the equally wonderfully named "Enhancing Online Shopping Atmosphere," which describes a Second Life–like avatar-based shopping experience, complete with helpful virtual experts (not referred to in the filing, however, as geniuses).

One recent filing that we hope comes to fruition describes giving iTunes the ability to use your Mac to broadcast all of its stored tunes to your iPod or iPhone wirelessly. If this dream becomes reality, you'll no longer be limited by the storage capacity of your iPod, but only by its ability to connect to the Net.

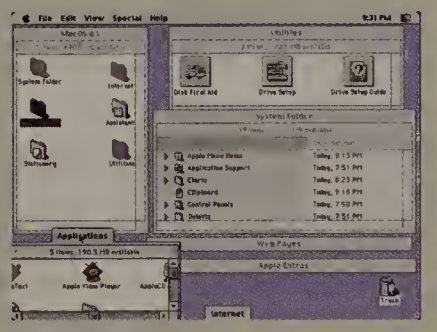
There are a few holes in Apple's patent-protected future, however, even in areas where other engineers are hard at work. For example, we couldn't find any filings for brainwave-controlled input devices or for acoustically activated virtual keyboards.—**RIK MYSLEWSKI**

3 THINGS OS X COULD LEARN FROM THE CLASSIC MAC OS

1 WindowShade

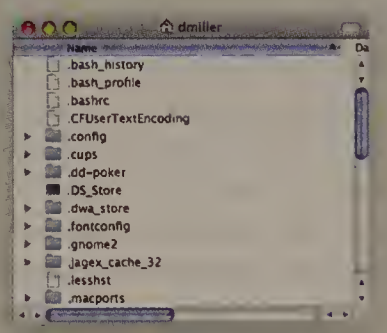
WindowShade debuted as a standard operating system feature in System 7.5. (Before that, it was available as a third-party system extension.) The idea was simple: double-click in the title bar of any window, and that window "rolled up" to show nothing but the title bar. Double-click in the title bar again, and the window contents would "roll" back down. In OS X, WindowShade was replaced by the concept of minimizing a window to the Dock. That, though, is far inferior to WindowShade. WindowShade let you get a quick glance at the contents of the window behind the front one. Double-click, look, and then just double-click again to go back—all without ever moving the mouse. Minimize a window in OS X, and you've got to move the mouse all the way down to the Dock to get it back.

2 Predictable Finder Window Behavior



Before OS X, Apple had inherited two approaches to file management: In the classic Mac OS Finder, each folder could be opened as one, and only one, window, which always remembered its size, location, and display options. In the Next Workspace Manager, each window was its own file browser. With the Mac OS X Finder, Apple tried to implement both concepts and wound up with a jumble that does neither well.

3 File Names Were Just Names



The rules for naming files in the classic Mac OS were wonderfully simple. You weren't allowed to use a colon, and that was about it. (And in case you couldn't remember even that rule, the system wouldn't let you type a colon in a file name.) There were no weird rules to remember or get in the way of your work. In OS X, however, files without file-name extensions sometimes no longer work. More irritatingly, Mac OS X automatically treats any file whose name starts with a dot as "invisible"—as if the OS were a Unix system from 1971. So it's still harder to edit and manage files with names like .htaccess (common in Web development) than it was in the Mac OS of 15 years ago.—JOHN GRUBER

1986

March 2, 1987
Apple Desktop Bus
Apple's ADB port shows up on the Macintosh SE, which also includes an internal expansion port.

October 1987
Taking Mac OS to Task
Apple releases its first official multitasking operating system, System 4.2, which provides cooperative multitasking via MultiFinder.

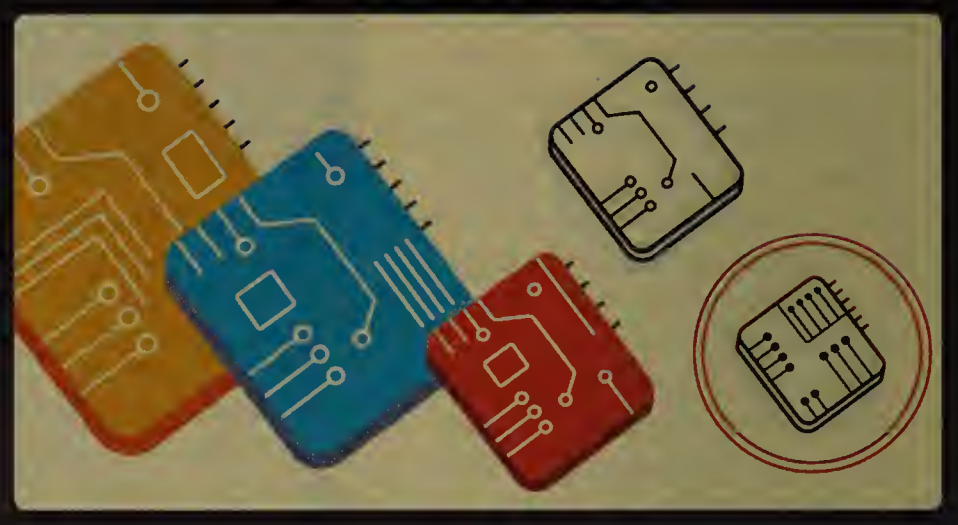
January 16, 1986
One Megabyte
The Macintosh Plus features 1MB of RAM, an 800K floppy drive, and the Mac's first SCSI interface.

1987

March 2, 1987
Macintosh Sees Colors
With six NuBus slots and the ability to produce color graphics, the Macintosh II represents a drastic shift in Apple's strategy.

Processors

Faster CPUs and GPUs are on the horizon



Microprocessors are the brains that power computers, and graphics processing units (GPUs) help provide fast, high-quality graphics display. The faster they both are, the happier users tend to be.

Microprocessors and GPUs evolve in two primary ways: chip makers shrink the distance between transistors (that distance is known as a chip's *process*), which leads to faster and more-efficient chips; and they change processor architecture to improve how processors manage data and instructions, which increases overall performance.

CPUs

Most of today's Macs are powered by the Penryn family of chips, which are built using a 45-nanometer (nm) process and are based on Intel's Core architecture. They're fine chips, but Intel's new 45nm Nehalem architecture features a host of improvements that should significantly boost overall performance. Expect to begin seeing Macs with Nehalem chips in 2009.

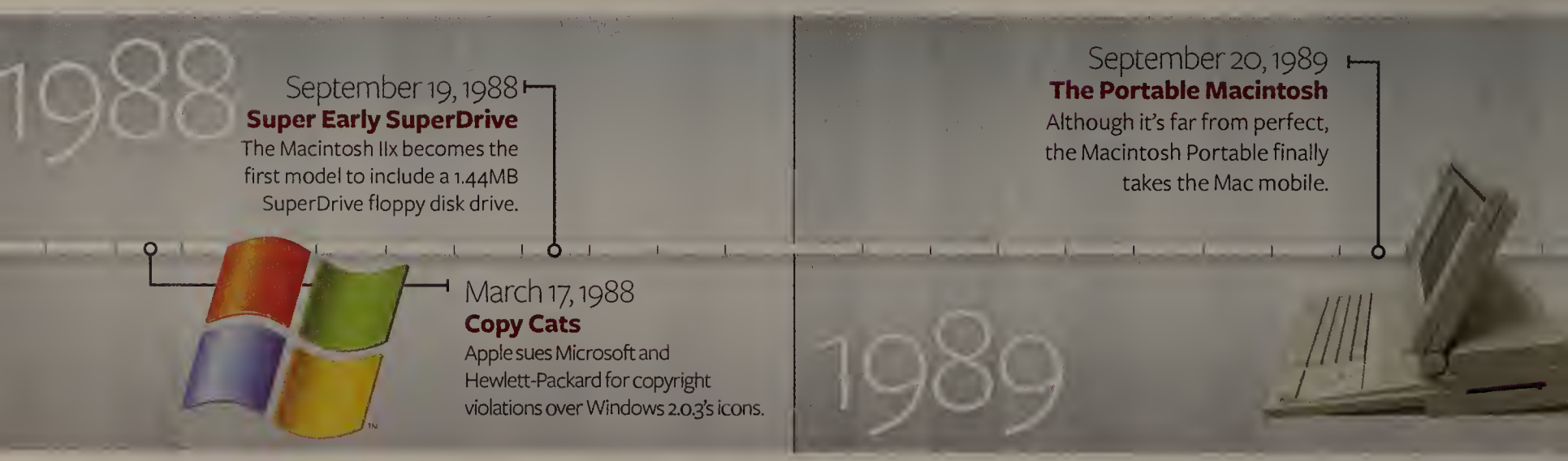
Nehalem's power is especially apparent when you're running software that takes advantage of multithreading—the ability to split processing tasks into multiple concurrent parts (threads). Nehalem microprocessors will have two, four, or eight cores, and will be able to simultaneously work on two software threads in each core, using a scheme called hyperthreading. Theoretically, an eight-core Nehalem chip can simultaneously process up to 16 threads—a capability that should make your next Mac quite snappy.

Unfortunately, most software can't yet take advantage of such extreme multithreading—but fear not. First, Nehalem's Turbo Mode senses when some cores are idle because software can't take advantage of multithreading, and it will both shut down the unused cores and increase the clock speed of the ones that are hard at work. Second, the next version of OS X, Snow Leopard, will include Grand Central, a technology that will enable developers to better exploit multithreading.

GPUs and the Future

Multithreading is a trick that GPUs have already mastered—their multicore structures use shader instructions designed for highly parallel tasks such as those required for rendering 3-D game frames. Traditionally, there have been three types of shaders—vertex, geometry, and pixel—but many GPUs are now moving to a unified shader system that offers more flexibility and better performance.

GPUs are fast, but their powers have mainly been reserved for drawing graphics. With the OpenCL technology of Snow Leopard, however, the unused clock cycles in their speedy cores will serve your Mac's CPU. Adobe has already built this trick into Photoshop CS4, enabling the app to perform some amazingly swift image transformations. When OpenCL arrives, more apps will have access to the power of your Mac's GPU.



6 WORST APPLE PRODUCTS OF ALL TIME

1 Macintosh IIvi and IIvx
Originally introduced in 1992 as replacements for the popular Macintosh IIci, the IIvi and IIvx featured a new case design and an internal CD-ROM drive. Unfortunately, the IIvi was powered by a measly 16MHz 68030 CPU, while the IIvx connected a 32MHz 68030 to a 16MHz bus; both were slower than the three-years-older, 25MHz IIci. The IIvi lasted only four months; while the IIvx held out for a year, the significantly faster 68040-based Centris 650 went on sale just four months after the IIvi and IIvx were released.

2 Macintosh TV
Apple's first foray into the world of television wasn't the Apple TV; it was the 1993 Macintosh TV, a black all-in-one Mac with a 14-inch CRT monitor. It wasn't an awful computer, but despite its name, it couldn't display TV from its cable-ready TV tuner card in a window. Apple made only 10,000 before canceling the weak-selling product.

3 Pippin

Apple's next attempt at a device that connected to your living room TV was the Pippin. Designed by Apple and introduced by Bandai in the United States in 1996 as a video game console for multimedia CD-ROM games, it was underpowered, overpriced, and title-poor compared with the Sony PlayStation, Sega Saturn, and Nintendo 64.

4 Power Macintosh 4400
Released in 1997, the Power Macintosh 4400 was Apple's feeble attempt at a cheap Mac knockoff. It had a sharp-edged metal case and more industry-standard components than other Macs, and it was horrible. It crashed all the time, had a particularly loud fan, and (oddly) had its floppy drive on the left side—convenient for maybe 10 percent of the population.

5 Twentieth Anniversary Mac
Released in 1997, the Twentieth Anniversary Mac (TAM) featured an elegant, upright design that Apple would revive years later with the flat iMac. But in a triumph of form over both function and common sense, Apple priced the underpowered TAM at $7,499—$5,500 more than the comparable Power Macintosh 5500. Within a year, Apple knocked that down to $1,995.

6 Apple USB Mouse
Perhaps no Apple product has been as reviled as the "hockey puck" mouse, which shipped with the original iMac in 1998. Its small size made it awkward to grasp, and its round shape made it tricky to orient. The only people who liked it were the folks who made third-party mice and USB-to-ADB adapters that enabled the use of older mice.—ADAM C. ENGST

One of Intel's most interesting multicore projects, code-named Larrabee, is a hybrid architecture with the programmability of a CPU and the parallelism of a GPU. Intel isn't saying how many cores Larrabee processors will have, but it has shown projected-performance graphs describing Larrabee processors with up to 64 cores. The first Larrabee chips will be tuned for high-performance graphics and video, and they'll appear in 2009 or 2010—just in time for Snow Leopard.

After Nehalem and Larrabee, Intel plans a 32nm process named Westmere in 2010, a Sandy Bridge architecture in 2011, a 22nm process named Ivy Bridge around 2012, and a Haswell architecture after that; later, Intel plans to shrink processes to 16nm and then 11nm, and to develop new architectures that add more—and more-specialized—cores. If Intel sticks to its public plans, the future should be bright.—RIK MYSLEWSKI

1990

October 1990
Extension Cord
The Apple Extended Keyboard sets the standard for sound, feel, and durability in a keyboard.

October 21, 1991
PowerBooks Turn Heads (and Trackballs)
Apple's PowerBook 100, 140, and 170 revitalize notebook computing with their clever, compact, and stylish designs.

February 19, 1990
Opening Shop
Adobe's famous image editor premieres exclusively on the Mac. Photoshop later makes its way to Windows (in 1992).

1991

December 2, 1991
Think Quick
Apple's QuickTime multimedia software starts the Mac's love affair with music and video.

Storage

Make way for faster data connections and solid-state drives

In the beginning—that is, 1984—a Mac could store 400K on a painfully slow 3.5-inch floppy disk. Today, your MobileMe membership provides you with 20GB of combined e-mail and file storage space—that's 50,000 times as much—up in "the cloud," swiftly accessible by Macs and PCs, iPhones, and iPod touches from anywhere with a data connection.

We now have USB 2.0, FireWire 400, and (on many systems) FireWire 800 connections, as well as fast internal Serial ATA (SATA) connections for hard drives. USB 3.0, scheduled to arrive in late 2009 or early 2010, packs a theoretical top speed of 600 MBps. FireWire 800, in comparison, maxes out at 100 MBps (but despite the FireWire community's emerging standards for FireWire 1600 and 3200, and plans for a future 1250-MBps version, neither Apple nor storage vendors are biting). External SATA (eSATA) currently tops out at 300 MBps, although a 600-MBps version is also in the works.

USB 3.0 will have nine times the power-supplying capability of USB 2.0, and it will be backward-compatible with earlier USB devices, even though its cables are noticeably chunkier (USB 3.0 requires five more wires than earlier versions). If USB 3.0—also known by the marketing moniker of SuperSpeed USB—is broadly adopted by the PC industry, FireWire will sink even further into irrelevance.

Wireless USB devices are also beginning to appear. At up to ten feet away from a computer, they're about as fast as your current Mac's USB 2.0 ports; at up to 30 feet away, they're about 25 percent as fast. Wireless USB won't replace high-speed cables, but it will be a welcome addition for flash drives, media players, smart phones, and more.

In the short run, eSATA will continue to take over the midrange market, and the high ground will be occupied by Fibre Channel and other technologies (one being SAS, available on Mac Pros and the serial ver-

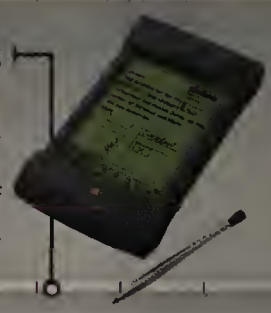
HARD DRIVES PHOTOGRAPH BY PETER BELANGER

1992

October 19, 1992
Dynamic Duo
The PowerBook Duo 210 (plus Duo Dock) is Apple's first attempt at a laptop/desktop hybrid.

March 1992
Jonathan Ive Joins the Team
Ive's design influence will extend to the iMac, the iPod, and beyond.

August 3, 1993
Apple Launches the Modern PDA
The Newton MessagePad provides an early glimpse of touch-screen design.



1993

February 10, 1993
Portable Palette
The PowerBook 165c—Apple's first color laptop—makes its debut.

sion of the venerable SCSI, the Mac's first—and notoriously finicky—storage connection).

Up in the rarified air of professional content creation and media-distribution systems, intelligent switched fabric links such as InfiniBand will connect tomorrow's pro Macs with top-speed storage systems that may consist of components that comply with the Intel-supported Storage Bridge Bay standard.

Devices

In addition to these changes in storage connections, there are big changes on the horizon for storage devices. Ever since the first disk drive—IBM's 1-ton, 50-disk, 5MB RAMAC—random-access storage has required spinning stuff: hard-drive platters, floppy disks, or optical media. Those days are ending with the rapid rise of a new class of solid-state drives (SSDs), which are more rugged, and which potentially consume less power and work faster, than any spinning disk.

Intel, for example, recently announced two families of SSDs, one designed for consumer use and one for high-end data-center use. The first employs what's called multi-level cell (MLC) technology; the second, single-level cells (SLC). MLC SSDs are slower and less expensive than SLC SSDs—Intel's first commercial MLC drive, the 80GB X-25M, sells for around $600. (Keep in mind that ten years ago a 9GB hard drive cost about $2,000, and the X-25M should outperform today's snappiest hard drives when reading files. It also has faster specs than drives from SSD manufacturers such as Samsung and Toshiba.) Unfortunately, the 128GB SSDs that Apple offers as options for MacBooks aren't from Intel—that company doesn't make a 128GB SSD.

The days of the humble hard drive are not numbered—its performance, speed, and reliability will continue to improve, and its cost-per-gigabyte advantage will be tremendous for the foreseeable future—but it's about to share the stage with hot new SSDs.—**RIK MYSLEWSKI**

The Best Mac Ever

The Mac I think of most fondly remains my **Macintosh SE/30**. While we were undergraduates, my now-wife and I bought it as a double-floppy SE, and I built it a 30MB external hard drive from parts. Later we upgraded to the SE/30 logic board, and installing a video card in its single slot introduced me to the wonders of multiple monitors. When I finally bought a new Mac, I gave the SE/30 an Ethernet card and made it a Web and mailing list server; it ran for ten years, until 2001. Now it sits on a bookshelf, reminding us of just how wonderful the Mac has been.—ADAM C. ENGST

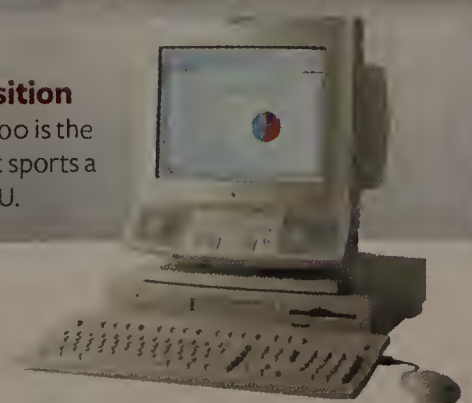
The **Macintosh SE/30** was the pinnacle of the original Mac hardware design. It looked much like its predecessors, but it was far faster—the first all-in-one Mac that could make software really sing. The specs seem silly by modern standards—such as the 40MB hard drive and the 9-inch black-and-white screen with only 512 by 342 pixels. But like any great Mac, the SE/30 wasn't a terrific system only at the time of its debut; it remained eminently usable for years to come. When I think of the original Mac era, the machine in my mind is the SE/30.—JOHN GRUBER

There was a time when every new Macintosh equaled or bettered all aspects of every previous model. The **Macintosh SE/30** came along very close to the end of that era, representing the apex of the original Macintosh form factor. Sporting every bit as much horsepower as the phenomenally expensive Macintosh IIx, the SE/30 was like a V12 engine shoehorned into a Honda Civic. Though future models with the original upright shape were released, they were all tagged with the derisive moniker Classic. The SE/30 bore no such shame. It was and is the undisputed king of the original, iconic Macs and, therefore, of all Macs for all time.—JOHN SIRACUSA

1994

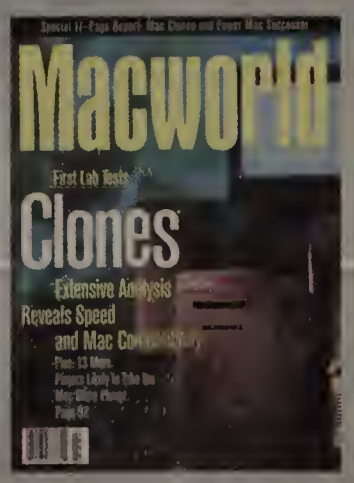
May 16, 1994
A Touch of Novelty
The first integrated notebook trackpad appears on the PowerBook 500 series.

March 14, 1994
The PowerPC Transition
The Power Macintosh 6100 is the first PowerPC Mac, and it sports a 60MHz PowerPC 601 CPU.



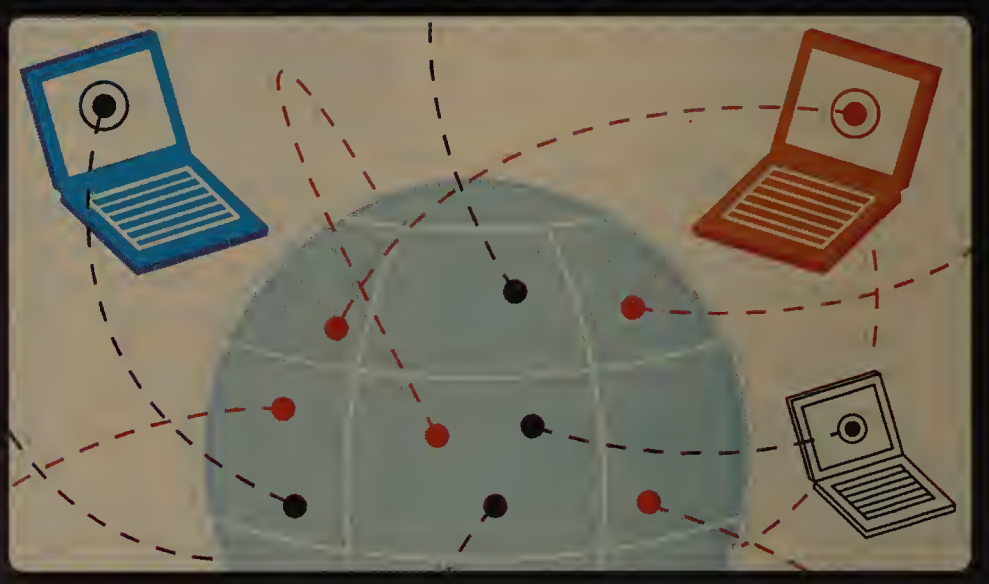
1995

March 27, 1995
Attack of the Clones
The Radius System 100, the first authorized Mac clone of the 1990s, debuts.



Networking

Long-range WiMAX and speedy FiOS mean more bandwidth for more people



The original Mac was the first mass-market computer to be networkable right out of the box. A popular saying of the time boasted that LocalTalk ensured "no Mac is an island."

Today's Gigabit Ethernet is well over 4,000 times faster than LocalTalk, and even-faster Ethernet protocols already exist. The 10-Gigabit Ethernet standard was established in 2002, and compliant hardware is readily available—albeit pricey. A standard with both 40-Gbps and 100-GBps modes is on the horizon.

Just don't expect faster-than-Gigabit Ethernet on your Mac, because there's little need for such performance outside of high-end data centers and supercomputing environments. The real action on the networking front today is in the area of connecting to the Internet faster, more reliably, and on-the-go.

For example, Wi-Fi is all well and good, but in a few years we'll wonder how we ever put up with having to be so close to a wireless access point. Broadband is about to go long-range, with signal distances measured in miles, not feet. The only question is which technology (or technologies) will take us into that future.

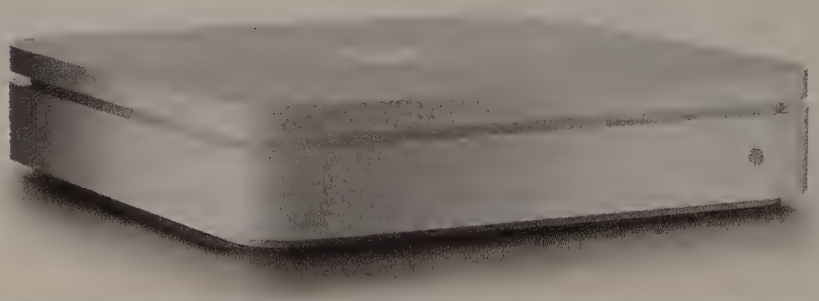
The Players

The competing technologies can be divided into two camps. First, there are those that are evolving from current mobile phone technologies, such as EVDO (Evolution Data-Optimized) and HSPA (High-Speed Packet Access). Then there are the new kids on the block, built from the ground up to be data carriers, such as WiMAX (Worldwide Interoperability for Microwave Access) and LTE (Long-Term Evolution).

While EVDO, HSPA, and their ilk are currently about as fast as WiMAX and LTE (on paper, at least), the new guys have more room to grow. WiMAX 1.0, the current version, maxes out at around 60 Mbps; version 1.5 is scheduled to reach 125 Mbps in late 2009, and version 2.0 will exceed 300 Mbps in late 2010 or early 2011. LTE will match those speeds but will lag behind by a year or two.

Which will dominate? According to projections from Intel (a WiMAX champion and chip-set maker), the answer is neither. Both will coexist for the foreseeable future, while service providers develop and install the needed infrastructure.

Then there's traditional wired Internet access, with three major competitors: faster implementations of familiar DSL and cable, and the new wiry kid, optical

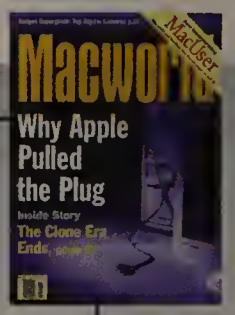


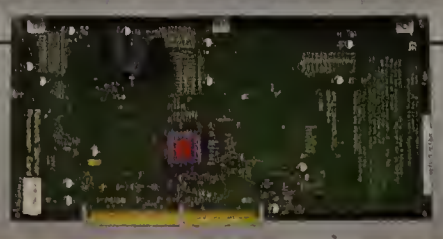
PHOTOGRAPH BY PETER BELANGER

1996

August 7, 1997
Bill Gates Looms Large
Gates's giant talking head and Steve Jobs announce a landmark Microsoft-Apple software and investment deal at Macworld Conference & Expo in Boston.

September 2, 1997
No More Clones
Realizing that clones cost the company more money than they earn, Apple axes the Mac clone program.





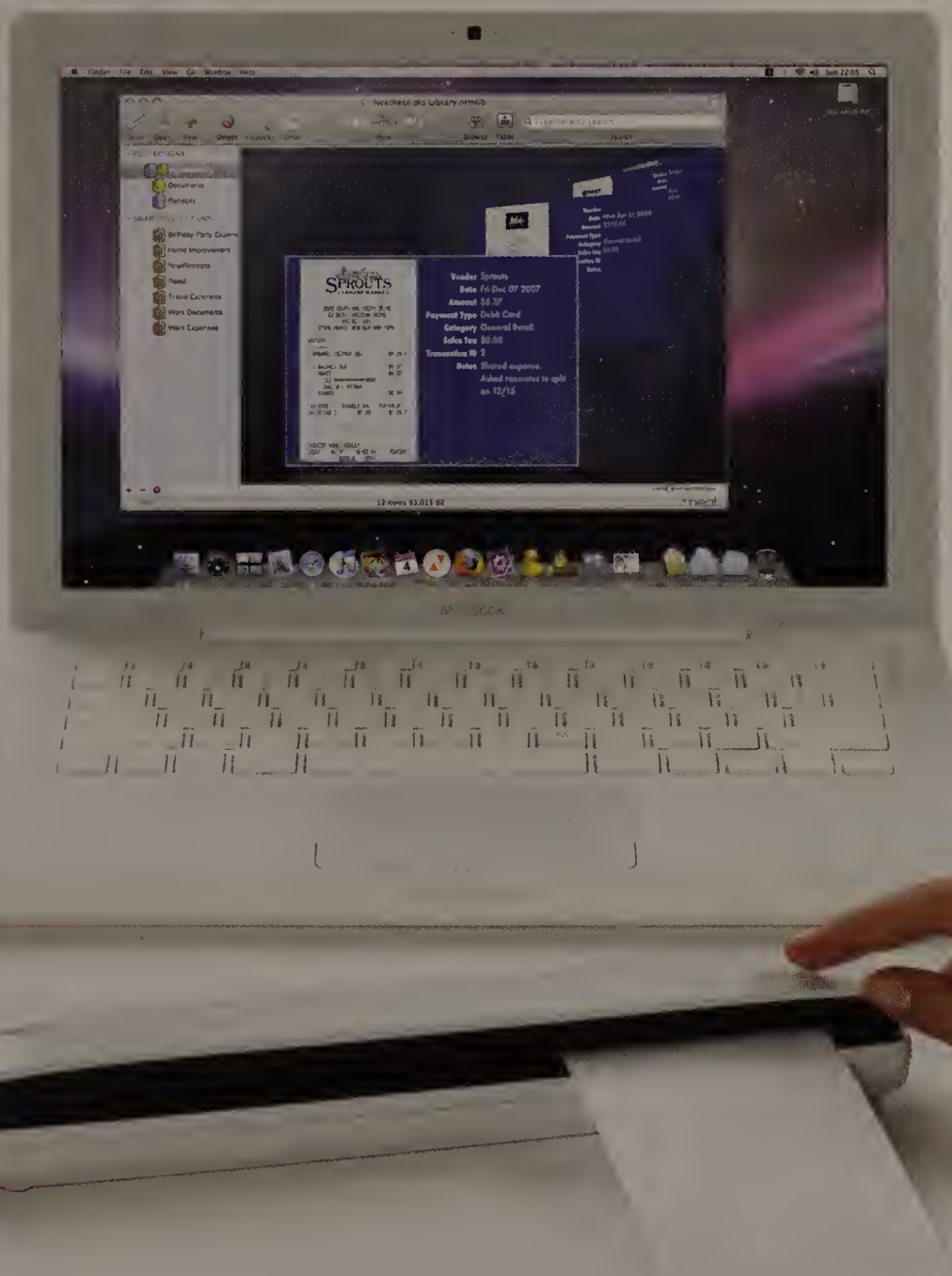
February 1996
Serve It Up
The short-lived Apple Network Server ships with IBM's Unix-based AIX operating system.

1997

August 14, 1997
Think Different
The award-winning TBWA/CHIAT/Day ad campaign is born unto the world.

September 16, 199
The Second Comin
Steve Jobs becomes App interim CEO, drawing a yearly salary of $1.

An organized, digital life.



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fiber—namely, FiOS (fiber optic service) from Verizon.

Today's predominant DSL protocol, ADSL2+, maxes out at around 25 Mbps. The next flavor, VDSL (very high speed digital subscriber line), promises to double that, but it's not quite ready. DSL, however, is and will continue to be cramped by broadband-limiting phone lines.

Version 3.0 of a new cable protocol with the numbing acronym DOCSIS (data over cable service interface specification) has the potential of 160-Mbps downloads and 120-Mbps uploads. Even better, it's already being tested in Minneapolis–Saint Paul, with an implementation that tops out at 50 Mbps for downloads and 5 Mbps for uploads, for a cool $150 per month.

Best Guess

Our money is on optical fiber. Verizon's FiOS, for example, is already available in multiple markets for monthly fees ranging from $43 for 10-Mbps downloads and 2-Mbps uploads to $140 for 50 Mbps and 20 Mbps, respectively. One reason for our fibrous preference is that optical fiber, being thin and light, is easier to install than traditional cable.

So how fast will your Internet access be, and when will it be that fast? Well, the Fiber-to-the-Home Council has asked Congress to set a goal of universally available 100-Mbps downloads and 100-Mbps uploads by 2015. Our advice: don't hold your breath. Your Internet access will get faster, but not that quickly.—**RIK MYSLEWSKI**

6 THINGS APPLE NEEDS TO DO RIGHT NOW

1 Rethink the Finder
It may have been the epitome of file-system graphical navigation in the early 1980s, but come on: its Flock of Seagulls haircut is showing. Apple, you've had more than 20 years to think of the Finder's next evolution. So evolve it already.

2 Don't Just Tell Me You Can't Eject the Media
Tell me *which* damned file is in use by *which* application. Either that, or give me a name, an address, and an appointment so I can slap the OS engineer responsible for this behavior, for a minimum of 40 minutes.

3 Fix Back to My Mac
This feature is way too cool and useful to be so unreliable. Once this thing starts to work as advertised, screen sharing, shared iTunes libraries, and a load of other features will become exponentially cooler and more useful as well.

4 Add Readable Media to iTunes' Portfolio
I can use Apple products to listen to music, view photos, and watch TV shows and movies. So what does Apple have against reading? Third-party Mac and iPhone reader apps have already proved that Apple has built some wonderful reading devices. So why can't I sync and read desktop documents on my iPhone and iPod as easily as I can sync and enjoy music and video? And why can't I buy reading material just as easily? Books, comic books, college texts—Apple should be selling them all in the iTunes Store. Do it all well enough, and people might even pay $500 for an Apple e-book reader.

5 Bring Back Licensed Apple Merchandise
We totally promise not to make stop-motion videos of the "I'm A Mac" and "I'm A PC" dolls gettin' it on.

6 Give the Mac Mini and Apple TV a Soul (One Each)
Apple excels in part because when it releases a new product, it makes an emphatic and aggressive argument that convinces you that there was a [*name of product*]-shaped hole in your heart all along and you never knew it. But the company hasn't yet made that case for the Mac mini or Apple TV. C'mon, Apple: if you don't believe in these two products, upgrade them until you do.—ANDY IHNATKO

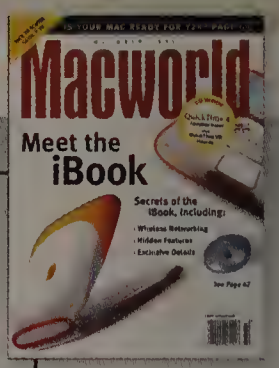
1998

October 15, 1998
8 Isn't Enough
Mac OS 8.5 becomes the first Apple OS version to run only on PowerPC-equipped Macs.

August 15, 1998
iMac Rewrites the Book of Mac
Featuring USB ports, no floppy drive, a G3 Processor, and an innovative all-in-one design, the first iMac causes tidal waves in the PC industry.

1999

July 21, 1999
iBook Cuts the Wires
With AirPort (on the colorful clamshell iBook), Apple starts the wireless-networking revolution.



October 5, 1999
Apple Goes to the Movies
iMovie 1.0 represents a breakthrough of easy-to-use video-editing software for the masses.

An underwater adventure awaits...

Aquaria

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Mac Universal

INDEPENDENT GAMES FESTIVAL 2007 WINNER

Portability

New batteries and power-saving technologies will prolong on-the-go life

At just under 16 pounds, 1989's Macintosh Portable was only about half a pound lighter than the original all-in-one Macs. The only direction to go was forward—and Apple went there quickly with only a few missteps. Today it offers a range of laptops, from the MacBook Air to the burly 17-inch MacBook Pro.

Compare the 2.75-pound lead-acid battery in the Macintosh Portable to the half-pound lithium-polymer power source in the MacBook Air—an admirable improvement, yes, but even the latest and greatest battery technologies run down and need significant time to recharge. Imagine if when your laptop's battery died you simply squirted some fuel into it, much like you refill your car's gas tank, and then immediately got back to work. That's exactly what you'll do when fuel-cell technology finally comes of age.

Power Generation Safe, portable, and reliable laptop fuel cells have been "coming soon" for a long time, but recent technology improvements, along with diminishing laptop power requirements, are bringing them closer. Another driving force is the military's increasing use of electronic devices: for you, extra batteries are merely a nuisance to carry; for a soldier, they're a mission-limiting load.

Other laptop-power improvements include nanotube-based capacitance devices that don't rely on the chemical interactions of batteries, can be recharged in seconds, and never wear out. Experimental plastic-based solar cells not only are less expensive than current silicon-based ones, but also can be painted onto a laptop. And even the holy grail of wireless power transmission is getting closer, with the successful demonstration at MIT of a short-range device based on resonant inductive coupling.

Power Savings There's a lot more to your portable future than new power sources—there's also, for example, the

The Best Mac Ever

The greatest Mac ever? It's the first one you owned. Anybody who answers differently is just going for style points. Mine was a **Macintosh 512Ke**. Even at the time, it was old and out of date. But a kid working a summer job in a department store could afford one—provided that the kid knew about the store's policy of continual automatic markdowns on discontinued merchandise. And provided that this kid disconnected the power lead from the logic board to ensure that the machine remained unsold all summer, until its original $2,495 price tag was gradually ground down to a very agreeable $99.47.—ANDY IHNATKO

2000

January 9, 2001
Beautiful Music
iTunes 1.0 seems ho-hum at first, but it cleverly sets the stage for the iPod and the iTunes Store empire.

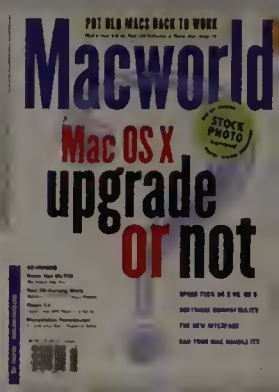
July 19, 2000
All Hail the Cube
The stylish but impractical Power Macintosh G4 Cube makes its debut to critical excitement and consumer ambivalence. Apple axes it within a year.

February 19, 2001
SuperDrive to the Rescue
Apple releases the industry's first combo CD- and DVD-burning optical drive, in the 733MHz Power Mac G4.

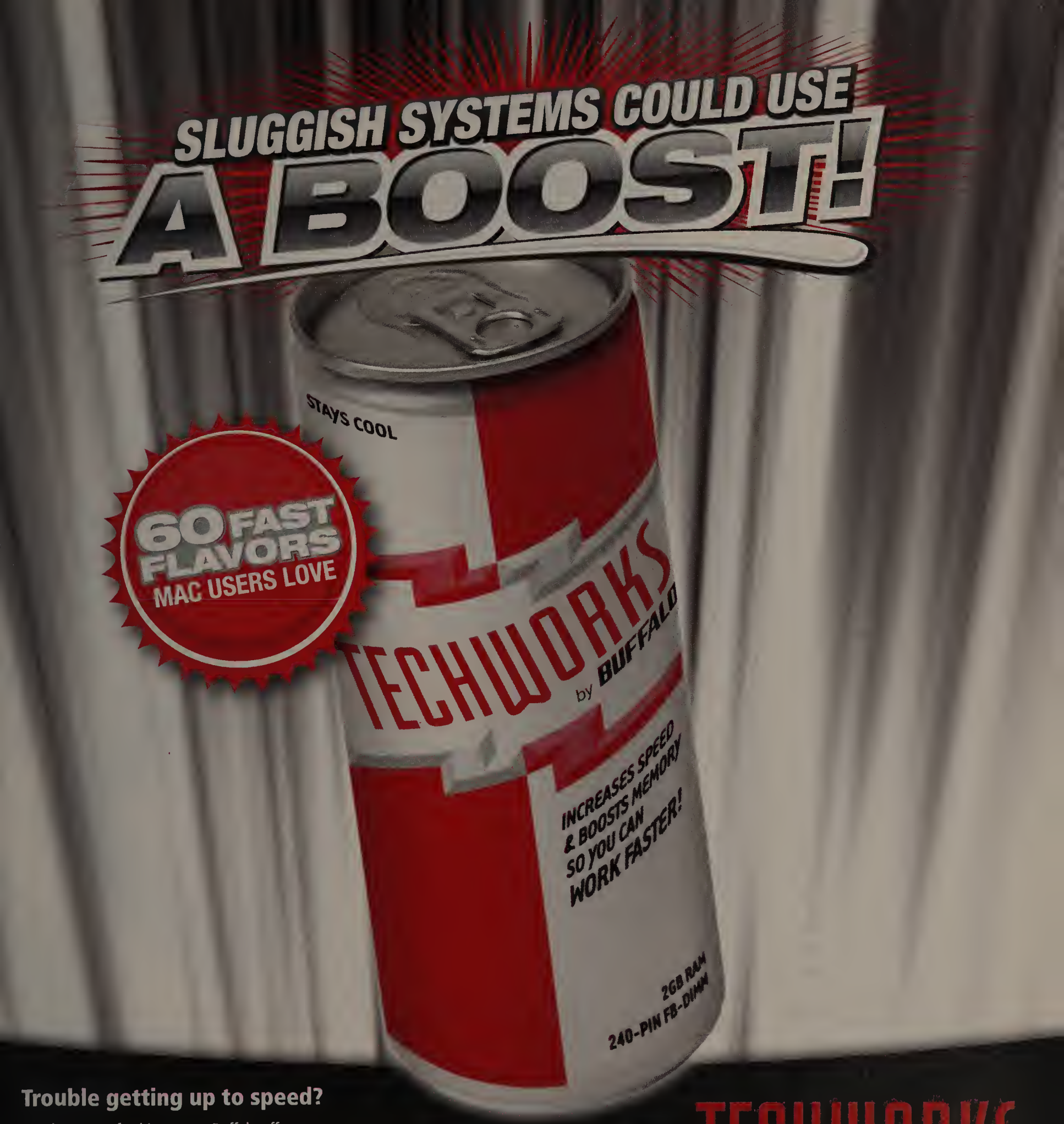
October 23, 2001
The iPod Rocks the Music World
Of the iPod, pundits ask, "Who would want such a thing?" The answer: "Everybody."

March 24, 2001
X Marks the Spot
Apple begins its shift to the Unix-based Mac OS X with its flashy new interface.

2001



SLUGGISH SYSTEMS COULD USE A BOOST



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Here's some refreshing news. Buffalo offers over **60 SKUs of RAM built and tested for Apple Computers.** Revitalize and energize your workflow. Upgrade your memory with TechWorks today!

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Mac

Fry's MICRO CENTER OWC

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ability to use power wisely. The MacBook Pro can now switch between power-saving Nvidia GeForce 9400M integrated graphics and power-hungry but better-performing Nvidia GeForce 9600M GT discrete graphics. Whether Apple will eventually incorporate this option into the more affordable MacBook, however, is anyone's guess.

Other potential power-savers include the latest iteration of OLED (organic light-emitting diode) displays, known as AMOLED (active-matrix OLED) displays. AMOLED technology has the same advantages as OLED displays—no need for power-hungry backlights, nice brightness, the ability to bend and flex, and a wide viewing angle—but provides better resolution, faster refresh rates, and the potential for larger sizes. AMOLED displays have been commercially manufactured only in smart-phone sizes so far, but look for them in your laptop's future.

Security Since laptops are now as popular as desktops, laptop security is becoming more important. To help you sleep better at night, Intel has developed security technology that, when notified that your laptop has been stolen, will remotely encrypt the files on that laptop's drive, use the built-in Web cam (or iSight, of course) to take a photo of the miscreant, track the location of the stolen laptop by means of its built-in GPS, and then allow you to decrypt the files after you get your laptop back. All Apple needs to do is add a GPS chip to its laptops and implement Intel's technology, and this peace of mind can be yours.—**RIK MYSLEWSKI**

4 OF THE BEST MAC ICONS OF ALL TIME

Finder

The icon for the Finder is just a simplified drawing of the computer itself. What the heck is that supposed to mean? In System 1.0, this icon was actually used for most files in the System Folder. Over the years, each of those system files got its own distinctive icon—except the Finder. For more than a decade and a half, the Finder held such primacy in the Mac user experience that its icon alone represented the thing itself: the Finder *was* the computer. Those days have passed, but the original Finder icon remains a powerful emblem of a revolutionary change in the computer interface.

ResEdit

Developer tools have historically been given short shrift when it comes to icons, and ResEdit is no exception. Its icon has too many elements for the available space and is not particularly attractive. But it's got one thing in spades: character. Mac development has never been a staid, serious endeavor. The independent spirit (and mild insanity) of the pioneering Mac developers is perfectly captured in the icon for this once-indispensable classic Mac OS developer tool.

System 7 Folder

Whenever the Mac platform set off in a new direction, its visual metaphors usually followed. The move to color graphics in System 7 was one such moment. System 7 reconsidered every element of the user interface, from the lowly folder on up. It's easy to take the subdued, tasteful look for granted, but things could have been very different. Many computer interfaces abuse color; the Mac didn't. Why pale blue? Why not the beige of a real-world manila folder? The Mac user interface was signaling its independence from the real-world anachronisms it was replacing.

Happy Mac

Once startup commenced, this was the first icon to appear on the screen of the original Macintosh, and on every Macintosh thereafter for 18 years. It set the tone for all aspects of the platform. Yes, it promised a quirky, fun, friendly experience for the user. But it also revealed Apple as a company with an endearing self-awareness. Apple didn't just mindlessly create an odd, upright computer that looked like an adorable little person with a screen for a face; it did so knowingly and it wanted to be the first to point it out. The Happy Mac has been replaced by the corporate logo, but its spirit endures.—JOHN SIRACUSA

2002

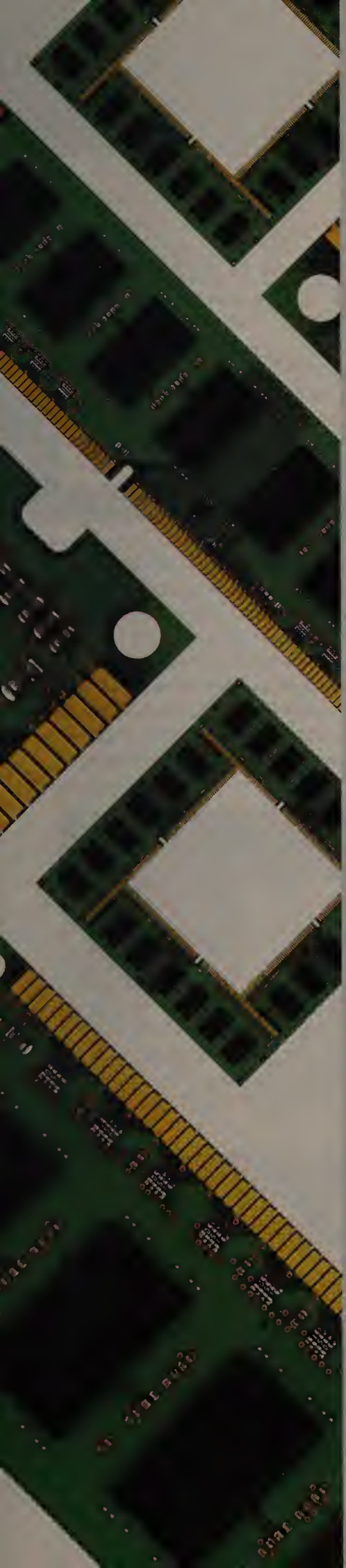
May 14, 2002
Mac on a Rack
Apple ships the Xserve, a rack-mount Mac for server, educational, and scientific markets.

January 7, 2002
The iMac G4 Blooms
The iMac G4 turns heads with an integrated flat-panel display on a flexible and stylish arm.

June 23, 2003
G5 Arrives
Touted by Apple as the world's fastest PC, the Power Mac G5 introduces the world to blazing speed and blazing cooling fans.

2003

June 23, 2003
Surfing Safari
With Microsoft's Internet Explorer for the Mac gone AWOL, Apple releases a lean and fast Web browser, Safari.



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Software

A new OS X? For sure. An App Store for Mac software? Probably not.

As much as things have changed, a Mac user plucked from 1984 and plopped down in front of a modern Mac wouldn't find it that foreign. We still have icons, windows, and menus. At the same time, Mac OS X is a completely different beast. So what can we expect from OS X over the next year or two?

The answer is "Not much beyond what we have now." OS X is Apple's core technology, and it isn't likely to change significantly in the near future.

Snow Leopard

Apple has already announced that with the next version of Mac OS X—Snow Leopard—it will focus on improving reliability and performance. Snow Leopard will add support for Microsoft Exchange and multicore computing, faster JavaScript execution, higher RAM ceilings, and access to the computing power in graphics chips, but it really represents a time-out in Apple's quest to add major new features to each new release of its OS.

In previous releases of OS X, we've gotten Time Machine, Spotlight, Dashboard, Automator, and more. But those features have often suffered from rough edges and—Spotlight and Time Machine in particular—have caused performance slowdowns. Let's hope Snow Leopard will make using a Mac feel snappier, without requiring that we buy new Macs.

Looking beyond Snow Leopard, we can do little more than make educated guesses. As long as the basic Mac hardware remains familiar, it's difficult to imagine the OS changing too much. I can't see Apple making more than incremental changes—along the lines of the gestural support recently added to Apple's laptops—to the graphical interface we're all accustomed to.

Will we see additional integrated apps such as Safari, Mail, iChat, iCal, and Address Book? Perhaps, but only if some computer capability—like Twitter-style

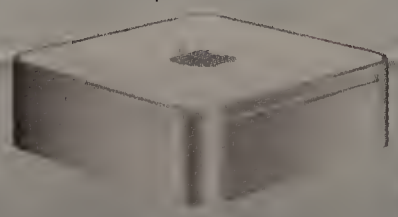
The Best Mac Ever

My inner contrarian forces me to suggest that the best Mac *I've* ever owned is one that Apple had no hand in designing or manufacturing. That would be my beloved 1996 **Power Computing PowerTower 180e**. As its name implies, this Mac-compatible tower bore a 180MHz PowerPC 604e processor, 32MB of RAM, a 2GB hard drive, and an 8x CD-ROM drive, and it offered expansion in the form of three PCI slots and two drive bays. For its time, it was a hell of a workhorse, providing more bang for the buck than any similar Apple-branded computer.—CHRISTOPHER BREEN

2004

June 28, 2004
30 Inches or Bust
Apple calls its 30-inch Cinema Display "the largest high resolution display ever created."

January 11, 2005
Not the Cube, We Swear
A new, low-end, consumer headless Mac, the Mac mini fares much better than its cubic predecessor.



April 29, 2005
Whoa There, Tiger
Apple sends Jaguar back to the jungle and releases OS X 10.4.

2005

August 2, 2005
Pushing Buttons
Twenty years of one-button history ends as Apple introduces the Mighty Mouse.

microblogging—becomes so ubiquitous that Apple feels it has to take control, as it has done for the Web, e-mail, instant messaging, and so on. Virtualization would seem to fit that bill, but with VMware, Parallels, and others solving the virtualization problem, don't expect Apple to go much beyond Boot Camp. I suspect that seeing Windows applications within OS X offends Steve Jobs's sensibilities.

Mac App Store?

The success of the iPhone App Store has led many people to speculate that Apple might try to do the same thing for Mac software, building a Mac App Store into iTunes and OS X. That could make it easier for everyday users to add capabilities to their Macs. And given the 30 percent cut Apple takes on App Store sales, it could prove lucrative for Apple.

However, a Mac App Store isn't nearly as obvious a move for Apple as the iPhone App Store now seems. Steve Jobs said that Apple would just break even on the iPhone App Store, due to server and bandwidth costs; the vastly larger size of Mac applications would drive Apple's bandwidth costs through the roof. Developers might stay away, too, if the technical and policy restrictions for a Mac App Store were similar to those that currently cause angst among iPhone developers. Unlike with the iPhone, developers have plenty of independent ways of selling Mac software—assuming Apple doesn't try something draconian like tweaking OS X so it runs only applications that have been digitally signed. My take? Don't hold your breath for a Mac App Store.

In the Clouds

Apple has yet to fully embrace "cloud computing"—really just another term for the Internet gussied up with modern concepts like social networking, open APIs, and software as a service. Apple is approaching the cloud conservatively, utilizing Internet connectivity and services to extend its platforms and applications, but not to radically open them up.

MobileMe's syncing, for instance, mostly just helps you manage your own information among multiple Macs, but it doesn't provide notable new ways to connect to other Mac users. And compare MobileMe's Gallery feature, where your photo sets are disconnected islands, to Flickr, where tens of millions of users have created an interconnected continent of 2 billion photos.

Apple's conservative attitude toward the cloud also shows in its focus on paid services—the iTunes Store, the App Store, and MobileMe. I could imagine Apple embedding some additional free Internet capabilities into OS X (off-site Time Machine backups to other computers, à la CrashPlan, for instance). But I can't see Apple doing much more than that, given the company's current management style.

In sum, although I'd expect to see refinements and some new applications in Snow Leopard, the OS itself isn't likely to see any revolutionary changes in the next few years. Now, Mac OS 11? That's another story.—**ADAM C. ENGST**

5 MILESTONE MAC GAMES

1 The Colony Four years before Wolfenstein 3D, Mac gamers had The Colony. Minimal texture mapping, and you couldn't look up or down, but it was 3D.

2 Crystal Quest Mac gaming distilled to its essence: eccentric, innovative, and highly addictive.

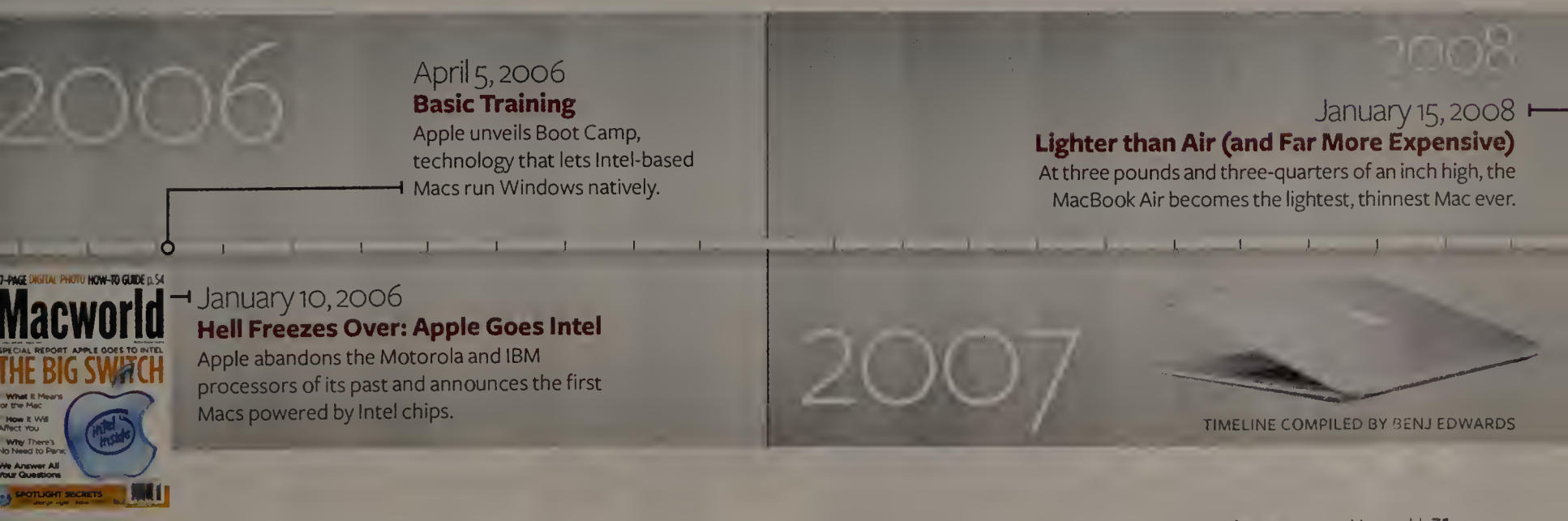
3 Dark Castle The Mac's original 512 by 342 screen was a razor-sharp canvas for exquisite animation and a mischievous sense of humor.

4 Escape Velocity Ambrosia Software's "shareware epic" with beautifully rendered sprites, great sound, and an open-ended storyline.

5 Marathon The Mac response to Doom had sharper graphics, better networking, and a deep, enthralling sci-fi story.—JOHN SIRACUSA

About the Authors

Adam C. Engst is the publisher of the TidBits (db.tidbits.com) newsletter and the Take Control e-book series. **Rik Myslewski** has been writing about the Mac since 1989—his blog can be found at www.myslewski.com.



TIMELINE COMPILED BY BENJ EDWARDS

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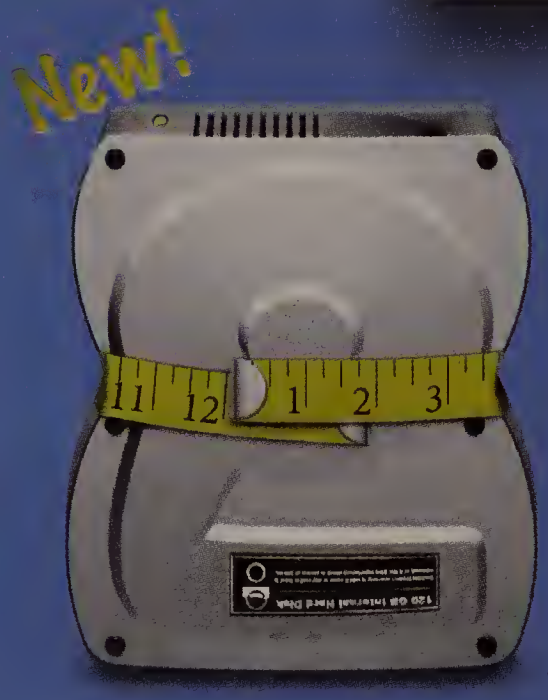

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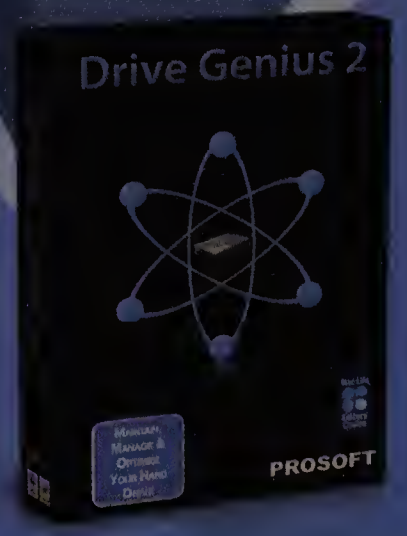

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WIRED? WIRELESS?
WHAT DO I DO?

BEYOND AIRPORT

By Becky Waring

Does your wireless network need help? Here are three ways to give it a boost.

Has your home network been letting you down lately? If you've experienced any of these warning signs, it could be time to upgrade it:

> You have dead spots around your house where you can't get wireless coverage.

> Your collection of wireless devices is growing rapidly, and network speeds are slowing as a result.

> Nearby networks are creating interference.

> It takes forever to perform a network backup.

> Streaming video looks choppy, even in the next room.

> You want to do more multimedia streaming, with a whole-house wireless music system such as Sonos or Squeezebox.

Even the latest AirPort Extreme (4½; macworld.com/3109) or Time Capsule (4; macworld.com/3992) base station may not be able to handle all of these large bit-pushing tasks alone.

Maybe you've been casting your wireless net around the house, and those far-flung wireless devices aren't receiving data fast enough; throughput falls rapidly the farther you go from the base station. Or maybe you're putting more data on that network than AirPort alone can handle; backups are taking too long, or live video streams are suffering from dropouts.

But there are solutions to these problems: you can augment your AirPort network with wired Ethernet, more Wi-Fi hardware, and powerline adapters. You can use just one or any combination of these options on the same network at the same time. In the pages that follow, we'll explain these alternatives, when it makes sense to use them, and how to implement them.

ILLUSTRATION BY LOU BROOKS

GIGABIT ETHERNET: THE NETWORK BACKBONE

These days, every AirPort base station has three free Ethernet ports (in addition to the one that connects to your broadband modem). There are many times when it makes more sense to use those wired connections than to use wireless.

WHEN YOU NEED IT

If your wireless network is lagging, especially when transmitting large files, wired Gigabit Ethernet is the best way to get it back up-to-speed.

Gigabit Ethernet has ten times the throughput of the fastest real-world wireless connection. You can back up your Mac, the kids can download movies, and your spouse can stream music from the family iTunes library, all at the same time, without bogging down your network. Two kinds of devices particularly benefit from wired connections:

Desktop Computers If you store a shared iTunes library, videos, or family photos on a desktop Mac, or if you share peripherals such as printers or DVD burners from it, and if that shared computer is in the same room as your AirPort base station, you should connect it to that base station via Ethernet. Even if the Mac and the base station aren't in the same room, you should still consider wired Ethernet; room-to-room cabling isn't that hard to set up or messy.

Streaming Video Hardware Because it buffers video on its internal hard drive, the Apple TV does not demand a faster wired connection—but it can still benefit from one, because it makes those downloads faster, takes a load off your wireless network, and lets you start playing those downloads sooner. Streaming video boxes such as the Roku Netflix player and Slingbox, and game consoles such as the PS3 and Xbox 360 (which stream video in real time and don't save it to disk), can benefit more. These devices can be a bit harder to wire up, because they likely aren't in the same room as your AirPort base station or the computer where you store your video files. But it's doable.

WHAT TO BUY

Adding wired components to your wireless network isn't really worth it unless you're using Gigabit Ethernet; if you don't have Gigabit Ethernet, your wired connections will run at 100 Mbps at best, negating many of the advantages that wired has over wireless.

All Intel Macs, iMacs released since mid-2005, PowerBooks since late 2001, and Power Macs since mid-2000 have Gigabit Ethernet. (To see if your Mac qualifies, select Apple: About This Mac, click on More Info, select Network in the Contents sidebar and Built-in Ethernet in the Active Services subwindow, and then look up Media Subtype in the subwindow below.) Routers have come late to the Gigabit party: Apple has offered Gigabit on its AirPort base stations since mid-2007, when it introduced the Gigabit AirPort Extreme.

If you already have a Gigabit router and enough empty ports on it for all the devices you want to wire up, you're all set. If you don't have enough empty ports on your router, or if you're using the Mac itself as your wireless base station, you can add more ports with an Ethernet switch. A switch is just a box equipped with a bunch of Ethernet ports that manages the network traffic among the devices connected to it.

When buying a Gigabit Ethernet switch, make sure to look for full-duplex models (which send data in both directions at full speed simultaneously) and auto-uplink capability (which can

GIGABIT ETHERNET

Pros: The fastest way to network compatible devices; switches can easily multiply one port into many.

Cons: You may need to run long Ethernet cables.

Price Range: $45 to $99 (not including wiring)

Companies Include: 3Com, D-Link, Linksys, Netgear, SMC, TrendNet, ZyXel

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eliminate the need for crossover cables). You can find many good 5- or 8-port Gigabit switches that are suitable for home use at street prices under $100 (see "Gigabit Ethernet Switches.")

Finally, when it comes time to wire these switches into your network, make sure that you use Cat 5e cable for all your connections. Cat 5e supports Gigabit Ethernet, while standard Cat 5 is rated up to 100 Mbps only.

HOW TO INSTALL

Installing an auto-uplink Ethernet switch is easy. You just connect it to your router with an Ethernet cable and then plug all your devices into its remaining ports.

The switch doesn't have to be in the same room as your router. If you have an attic or basement office with multiple devices you want to wire up, or if you're connecting multiple devices in your living room, you can run just one Ethernet wire from your base station to the remote location and then install the switch in that room.

Running Ethernet wires between rooms isn't hard: if there is an attic or crawl space above or below, poke the wires through the floor or ceiling, run them out of sight, and poke them back in again in the desired location. If you have to run wires within rooms, look for flat, adhesive, and paintable Cat 5e Ethernet cabling—for instance, FlatWire (www.flatwirestore.com)—that can run unnoticed along baseboards and moldings.

GIGABIT ETHERNET SWITCHES

PRODUCT	PRICE	PORTS	FULL DUPLEX	AUTO-UPLINK	FIND CODE*
3Com OfficeConnect Gigabit Switch 5	$80	5	●	●	4011
3Com OfficeConnect Gigabit Switch 8	$99	8	●	●	4012
D-Link DGS-2205	$60	5	●	●	4013
D-Link DGS-2208	$80	8	●	●	4014
Linksys EG005W	$60	5	●	●	4015
Linksys EG008W	$70	8	●	●	4016
Netgear GS605	$45	5	●	●	4017
Netgear GS608	$70	8	●	●	4018
SMC SMCGS5 EZ Switch	$48	5	●	●	4019
SMC SMCGS8 EZ Switch	$58	8	●	●	4020
TrendNet TEG-S5	$50	5	●	●	4021
TrendNet TEG-S8	$70	8	●	●	4022
ZyXel GS-105A	$50	5	●	●	4023
ZyXel GS-108A	$60	8	●	●	4024

● = yes. ○ = no. * In a browser's address field, typing in a find code after *macworld.com/* directs you to product information on the company's Web site.

WI-FI ROUTERS: APPLE'S NOT THE ONLY OPTION

Once you've hooked up the devices that need the fastest connections via Ethernet, think about what you should connect wirelessly: anything that moves around the house, including laptops and iPhones, and anything else you can't or won't connect with wires.

WHEN YOU NEED IT

While Gigabit Ethernet offers many advantages over wireless connections, sometimes Wi-Fi *is* the best connection; other times, it's a good fallback option.

Mobile Devices Most electronics that move—including your laptop, iPhone (or other Wi-Fi–ready smart phone), iPod touch, and Wi-Fi–enabled digital camera (including those with Eye-Fi cards)—should connect wirelessly. While you may on occasion want to connect your laptop via wired Ethernet (such as when you're transferring large files or doing a big backup), for the most part Wi-Fi is more convenient.

Fixed Devices If you don't transfer a lot of big files to or from your desktop Mac, or back up over the network, Wi-Fi is fine for less-demanding connectivity.

Networked Printers These don't require much bandwidth and are good candidates for Wi-Fi, although setting things up may require printer sharing.

WHAT TO BUY

If you have a modern Mac or an AirPort base station that supports the 802.11n standard (now at Draft 2.0), you may already have all the wireless networking you need. But if you don't, you may need to upgrade your wireless hardware. Your network will go only as fast as the slowest component, so unless your Macs, your wireless router, and the peripherals you're connecting wirelessly all support 802.11n, they'll network at only a fraction of the speed they otherwise could.

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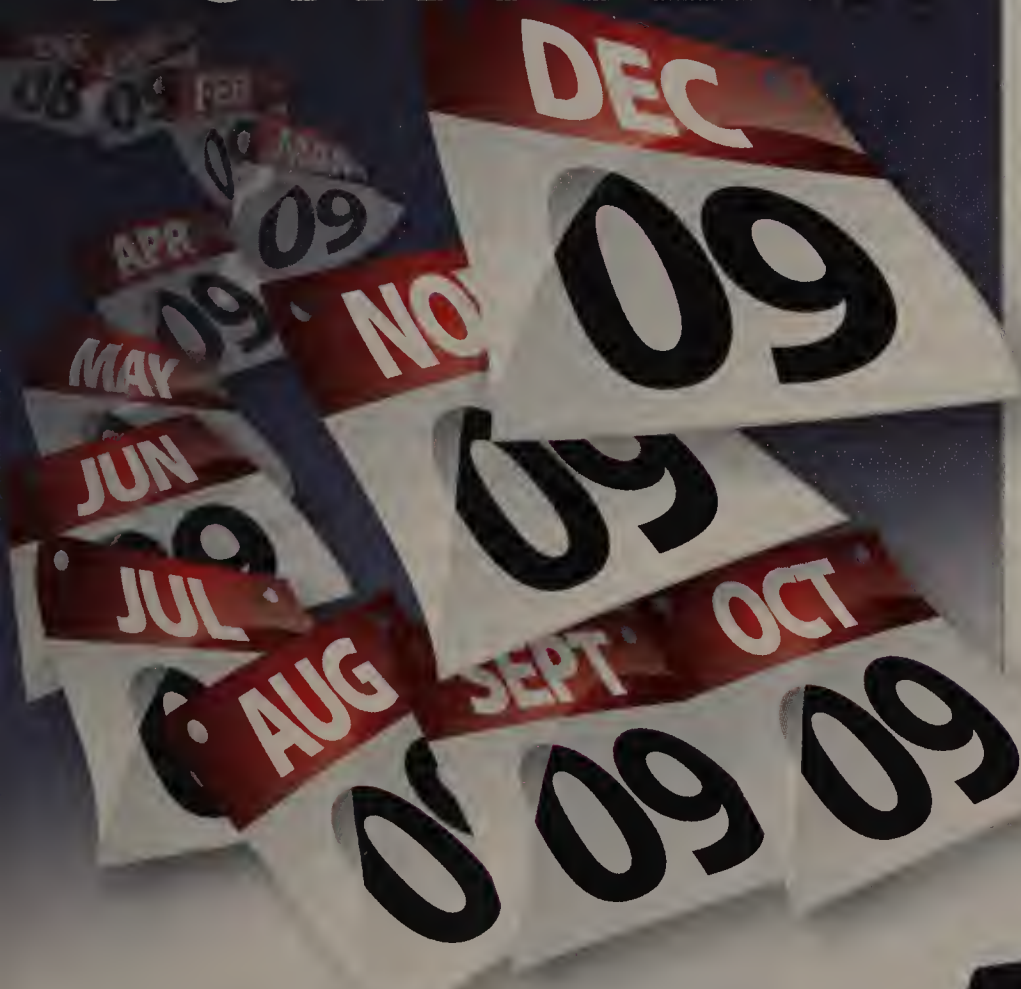

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THIRD-PARTY 802.11N WI-FI ROUTERS

PRODUCT	PRICE	SIMULTANEOUS DUAL-BAND SUPPORT	GIGABIT ETHERNET	USB PRINTER SUPPORT	USB HARD-DRIVE SUPPORT	UNIVERSAL PLUG-AND-PLAY	DYNAMIC DNS SUPPORT	FIND CODE *
Belkin N+ Wireless Router F5D8235-4	$120	○	●	○	●	●	●	4025
D-Link DIR-655	$140	○	●	●	●	●	●	4026
D-Link DIR-825	$200	●	●	●	●	●	●	4027
D-Link DIR-855	$360	●	●	●	●	●	●	4028
Linksys WRT310N	$130	○	●	○	○	●	●	4029
Linksys WRT610N	$200	●	●	○	●	●	●	4030
Netgear RangeMax WNR3500	$150	○	●	○	○	●	●	4031
SMC Barricade N ProMax SMCWGBR14-N	$175	○	●	●	○	●	●	4032
TrendNet TEW-633GR	$140	○	●	○	○	●	●	4033
TrendNet TEW-672GR	$180	●	●	○	○	●	●	4034

● = yes. ○ = no. * In a browser's address field, typing in a find code after *macworld.com/* directs you to product information on the company's Web site.

Both the current AirPort Extreme and the Time Capsule fill that bill, so you could upgrade to either one. Most Mac owners will default to that Apple hardware, but you should consider third-party routers.

Wireless routers from vendors other than Apple can be had for as little as $120, considerably less than an AirPort Extreme (see "Third-Party 802.11n Wi-Fi Routers"). Many can run on two wireless bands simultaneously (one in the 2.4GHz spectrum, another at 5GHz; the AirPort Extreme and the Time Capsule run on one frequency or the other). Running on two bands means you can dedicate one to video streaming and the other to computing traffic. Some third-party routers are specifically tuned for online gaming, with port triggering and fast processors. Many support advanced networking tools such as Dynamic DNS (DDNS), which makes it easier to access your LAN remotely from the Internet. Several let you connect add-on antennas, which can solve wireless coverage issues.

And most have more Ethernet ports than the AirPort Extreme or the Time Capsule.

That said, third-party routers are missing some features that make AirPort handy. None support Time Machine backups. Few of them have USB ports for attaching printers and hard drives. Other vendors lack Apple's skill in user interface design, so their setup software will require that you summon up your

WI-FI ROUTERS

Pros: Wide selection of products; some support simultaneous dual-band; advanced networking options.

Cons: No Time Machine or AppleTalk support; comparatively poor setup utilities; few models with USB ports.

Price Range: $120 to $360

Companies Include: Belkin, D-Link, Linksys, Netgear, SMC, and TrendNet

PHOTOGRAPH BY PETER BELANGER

inner nerd. (Belkin and Linksys are notable exceptions.) And using a third-party wireless router means that you have to call two vendors, not one, if you encounter problems.

HOW TO INSTALL

If you do opt for a third-party router, be prepared for a bit more work than you'd face with Apple hardware. Although Belkin and Linksys offer excellent Mac setup utilities, the configuration software for most non-Apple routers—if they come with configuration software at all—is Windows-only. But you can still configure most such routers from your Web browser.

The usual setup routine is this: Plug the router into your Mac via Ethernet. Enter the router's default IP address in your browser. (Make sure your Mac's Ethernet port is set to Using DHCP in the Advanced window of the Network preference pane.) Enter a user name and password to access the router's configuration screens. They are typically crude compared with Apple's, but you can usually find what you need quickly.

However, finding some of those access details can be tricky. The default IP address (usually something like **192.168.0.1** or **192.168.2.1**) and password (often **admin**, **password**, or blank) should be, but aren't always, specified in the user documentation. If there are no printed docs, look for a PDF file on the install CD, or browse the support area of the vendor's Web site.

After entering the password, you'll be at the configuration utility's home screen, and from here on you can follow the same directions in the manual as for PC users.

If you buy a simultaneous dual-band router, such as the D-Link DIR-855 or the Linksys WRT610N, you can use that setup screen to create two separate networks—one on the 2.4GHz band, the other on the 5GHz. Just make sure that the devices you want to put on the 5GHz network support this setup. Most new HD-capable streamers with built-in Wi-Fi—including the Apple TV and Windows Media Center Extenders—do.

POWERLINE: FILLING IN THE GAPS

While not as well known or widely used as Wi-Fi or Ethernet, *powerline networking*—using your existing home electrical wiring to transmit data, turning every outlet in your house into a potential network connection—can be a lifesaver when Wi-Fi doesn't reach or when you can't (or won't) run Ethernet cabling.

WHEN YOU NEED IT

Compared with Ethernet, powerline reaches anywhere in the house without requiring that you run new wires, but it's much slower. The latest powerline gear runs around 100 Mbps in real-world usage—about the same as 802.11n Wi-Fi but only one-tenth the speed of Gigabit Ethernet. Pricewise, powerline can actually be cheaper than running Ethernet cable between distant rooms.

Compared with Wi-Fi, powerline reaches anywhere in the house and gives you consistent bandwidth with no drop-outs. But it's also more expensive: starter kits go for around $150 to $180, and additional adapters cost about $80 to $100 each. If your wiring is "noisy" (meaning the wires are subject to superfluous signals from other electrical equipment) or made of aluminum, or if you have multiple breaker panels and outlets that create distinct circuits, powerline may not work in your house at all.

POWERLINE NETWORK ADAPTERS

Pros: Use anywhere you have a wall outlet; reliable throughput; latest devices are plug-and-play—no software required.

Cons: Pricey; may not work with your electrical wiring; slower than Gigabit Ethernet; some devices require PC setup software.

Price Range: $80 to $180

Companies Include: Actiontec, Asoka USA, Belkin, D-Link, Linksys, Netgear, and ZyXel

As such, powerline networking makes sense for the following scenarios:

Networking Remote Locations Powerline is perfect for providing access in areas of the house where the Wi-Fi signal is weak or nonexistent and you can't run Ethernet.

POWERLINE ADAPTERS (SINGLE)

PRODUCT	ETHERNET PORTS (PER ADAPTER)	PRICE	FIND CODE [A]
Actiontec MegaPlug AV 200 Mbps	1	$90	3996
Asoka PlugLink AV 9164	4 [B]	$149	3997
Asoka PlugLink AV 9660	1	$85	3998
D-Link DHP-300 PowerLine HD	1	$90	3999
Linksys PLE300 PowerLine AV	1	$80	4000
Linksys PLS300 PowerLine AV	4	$100	4177
Netgear XAV101 Powerline AV	1	$80	4001
ZyXel PLA-400 HomePlug AV	1	$95	4002

[A] In a browser's address field, typing in a find code after *macworld.com/* directs you to product information on the company's Web site. [B] Plus six AC outlets on power strip.

Video Streaming Powerline adapters can provide reliable bandwidth for video streamers and game consoles in your living room. Powerline throughput is high enough for HD video (which requires up to 25 Mbps.)

Extending Wi-Fi Access Need Wi-Fi somewhere your main base station can't reach? You can buy hardware powerline adapters with their own wireless access points. Or plug an existing Wi-Fi access point (such as an AirPort Express in access point mode) into a powerline adapter.

WHAT TO BUY

When buying powerline hardware, you need to distinguish among three incompatible powerline standards.

The leading standard, which I recommend, is HomePlug AV. HomePlug AV products are rated at 200 Mbps and are available from Belkin, Linksys, Netgear, ZyXel, and several other vendors. Hardware supporting one of two earlier HomePlug standards (1.0 and Turbo), are still available, but they won't work with HomePlug AV.

The other two standards are HD-PLC (High Definition Power Line Communication, from Panasonic) and UPA (Universal Powerline Association, from D-Link, Netgear, and some others). Before you buy, make sure that the hardware you choose is either plug-and-play (requiring no software) or has Mac setup software. (All the kits in "Powerline Starter Kits" meet these criteria.)

Also, be sure to buy from a store with a good return policy, in case your home wiring is not up to snuff. When powerline works, it's great, but until you test it in your house, there's no guarantee it will operate at all. Finally, stick with one manufacturer. HomePlug AV hardware is supposed to be interoperable, but if you buy from one vendor, it'll be easier to troubleshoot any problems you run into.

In rooms where you need to connect multiple devices, consider Belkin's new Powerline AV+ kit (macworld.com/4006), which has three Ethernet ports rather than the usual one. It's an economical option for living rooms with multiple networked media and/or game boxes.

POWERLINE ADAPTERS (KITS)

PRODUCT	ETHERNET PORTS (PER ADAPTER)	PRICE	FIND CODE*
Actiontec MegaPlug AV Powerline Gaming Kit	1	$170	4004
Belkin Powerline AV Starter Kit F5D4074	1	$150	4005
Belkin Powerline AV+ Starter Kit F5D4075	3,1	$180	4006
D-Link DHP-301 PowerLine HD Network Starter Kit	1	$160	4007
Linksys PLK300 PowerLine AV Network Kit	4,1	$150	4008
Netgear XAVB101 Powerline AV Ethernet Adapter Kit	1	$150	4169
ZyXel PLA-400 HomePlug AV Powerline Ethernet Adapter	1	$165	4010

*In a browser's address field, typing in a find code after *macworld.com/* directs you to product information on the company's Web site.

If you want to create a Wi-Fi network from a powerline adapter, powerline access points (compatible with HomePlug AV) are available from Actiontec and ZyXel, among others, for about $120. These can be configured on your Mac through browser-based utilities, just as standard Wi-Fi routers can.

HOW TO INSTALL

Most HomePlug AV adapters are plug-and-play. One adapter plugs into your router (via Ethernet) and a nearby electrical outlet (using a provided cable). You then plug another adapter into another outlet on that same electrical circuit for each peripheral you want to connect. That should be it: no setup or software involved. The connection will appear as a standard 100-Mbps Ethernet connection to your Mac or other attached devices.

Some powerline gear requires software setup of each adapter from a Windows PC. If that's the case, don't let it stop you from using powerline; you'll need to borrow a PC just this once.

To work properly, powerline adapters should be plugged directly into the wall, rather than into a power strip or extension cord.

PHOTOGRAPHS BY PETER BELANGER

Becky Waring is a technology writer and former *MacWeek* reviews editor based in Berkeley, California.

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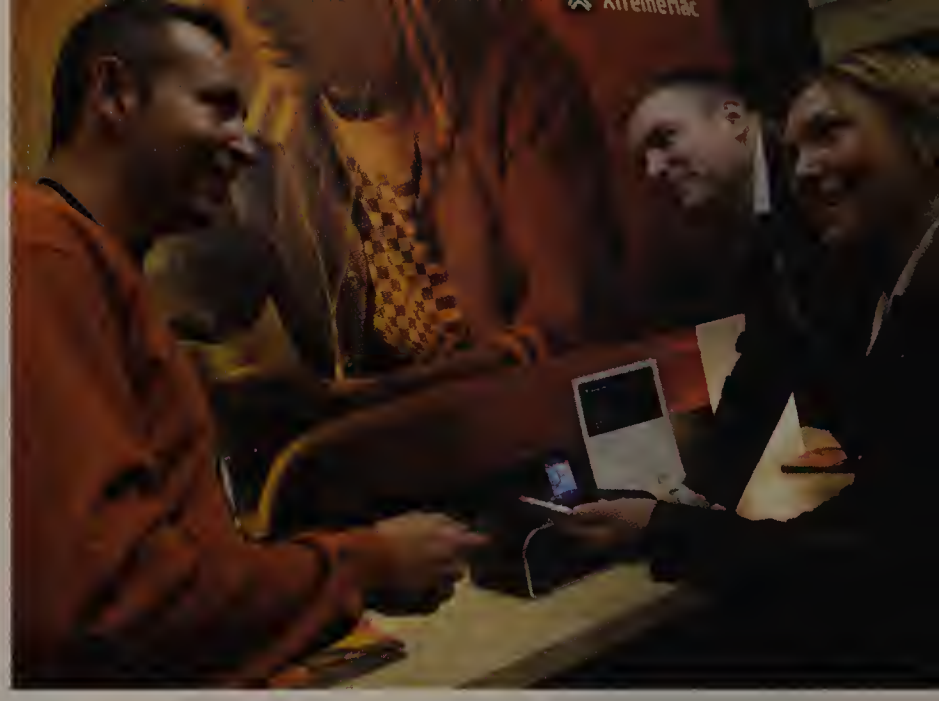

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CONFERENCE OVERVIEW

Monday, January 5	10:00am	–	6:00pm	MacLabs
	11:00am	–	6:00pm	Power Tools – Series 1
Tuesday, January 6	**11:00am**	–	**6:00pm**	**Expo Hall Open**
	11:30am	–	6:30pm	Power Tools – Series 1
	11:30am	–	1:00pm	MacLabs
	11:30am	–	1:30pm	Supersession 1
	1:00pm	–	1:45pm	Expo Plus Session 1
	2:30pm	–	3:30pm	Feature Presentation
	3:00pm	–	5:00pm	Supersession 2
	4:00pm	–	4:45pm	Expo Plus Session 2
	8:00pm	–	11:00pm	Macworld Blast! Party
Wednesday, January 7	9:00am	–	10:00am	Feature Presentation
	10:00am	–	6:00pm	MacLabs
	11:00am	–	4:15pm	Users Conference
	11:00am	–	5:00pm	MacIT® Conference
	11:00am	–	6:00pm	Power Tools – Series 2
	11:00am	–	**6:00pm**	**Expo Hall Open***
	11:30am	–	1:30pm	Supersession 3
	1:00pm	–	1:45pm	Expo Plus Session 3
	3:00pm	–	4:00pm	Feature Presentation
	3:00pm	–	5:00pm	Supersession 4
	6:30pm	–	7:30pm	Birds-of-a-Feather (BOF) Meetings
Thursday, January 8	9:00am	–	10:00am	Feature Presentation
	10:00am	–	**6:00pm**	**Expo Hall Open**
	10:00am	–	6:00pm	MacLabs
	10:30am	–	4:30pm	MacIT® Conference
	11:00am	–	4:15pm	Users Conference
	11:00am	–	6:00pm	Power Tools – Series 2
	11:30am	–	1:30pm	Supersessions 5
	1:00pm	–	1:45pm	Expo Plus Session 4
	3:00pm	–	5:00pm	Supersessions 6
Friday, January 9	9:00am	–	4:00pm	Market Symposiums
	9:00am	–	4:00pm	Creative Safari
	10:00am	–	12:00pm	MacLabs
	10:00am	–	**4:00pm**	**Expo Hall Open**
	10:30am	–	4:00pm	MacIT® Conference

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The Mac is the easiest computer in the world to use, and it comes with a plethora of features that may need some clear explanations and demonstrations to help you understand how to best use it. Anyone new to a Mac will enjoy learning the ins and outs of Mac computing in this fast paced course.

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EXHIBITOR LIST

Spanning two full halls, and featuring over 500 exhibitors, the Expo Hall is the place to see the latest products from the hottest companies in the industry.

Expo Hall Hours

Tuesday, January 6	11:00 AM- 6:00 PM
Wednesday, January 7*	11:00 AM- 6:00 PM
Thursday, January 8	10:00 AM- 6:00 PM
Friday, January 9	10:00 AM- 4:00 PM

**Private viewing Expo Plus and Conference Attendees only (from 10:00 AM - 11:00 AM)*

2009 Exhibitor List (as of 10/21/08)

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Power Tools

- System Imaging & Deployment
- AppleScript
- Mastering Directory Services
- Teleworking 2009: A Technical Guide to Being & Managing a Remote Workstaff
- Total Network Awereness: Tools & Techniques
- Mac OS X Server - Behind The Box
- Mastering the Adobe Creative Suite
- Learning Flash CS4
- FileMaker

MacLabs

- DNS Management
- UNIX Scripting
- Running Your Wireless Network Safely & Reliably– Tips on Best Tools
- Using InstaDMG
- Automating Active Directory Integration
- MacForensics

Users Conference

- Real World Mac Troubleshooting
- Mobile Me - Inside Apple's New Online Service
- The Complete Guide to Backing Up Your Mac
- Creating Dynamic Interfaces with Flash & Databases

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- Feature Presentations
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foneGEAR
Freeverse
FTS
Fujitsu Computer Products of America
Fuze
Garage Sale
GeeThree
Gefen
GelaSkins
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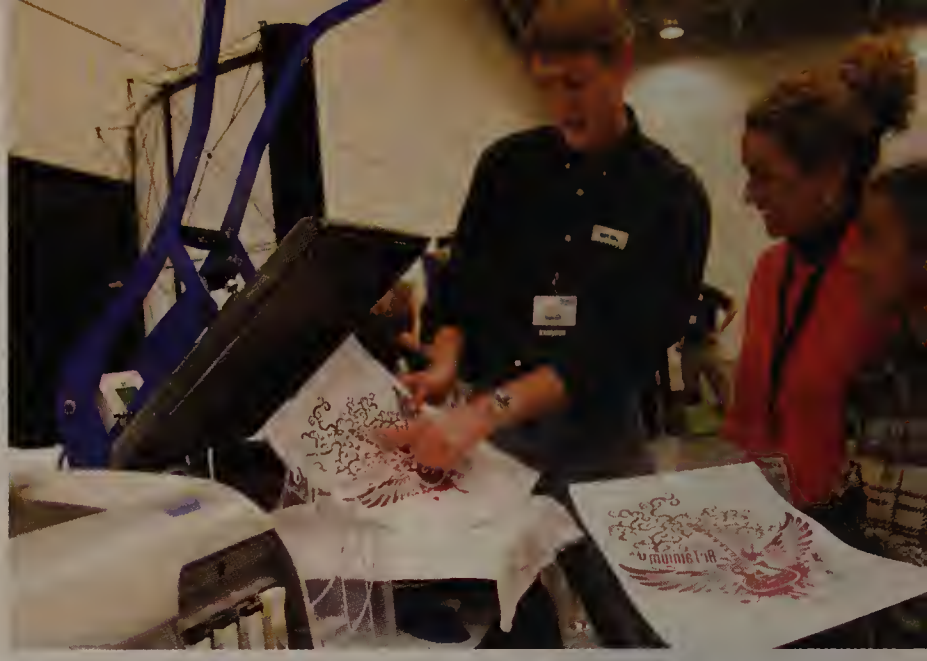
- Final Cut Studio 2 – In-Depth
- Photoshop
- Mastering the Adobe Creative Suite
- Learning Flash CS4

MacLabs

- Make Your Color Behave
- Final Cut Studio 2 - Studio Workflows
- Final Cut Studio Overview

Users Conference

- Ask the Editors!
- Creating Dynamic Interfaces with Flash & Databases
- The Designers Role in Sustainable Practice



- Graphic Secrets for Creative Pros: Photoshop CS3 & Beyond!
- Exploring Panoramic Virtual Reality (VR) Photography

Market Symposium

- New Media Artists

Private Expo Hall Viewing Hours

With so much time spent in conference sessions during the week, we want to give conference attendees some extra time to meet with exhibitors and see the show floor. Wednesday morning at 10:00 am conference and Expo Plus attendees will be able to visit the expo halls an hour before the crowds begin. Set your alarm clock and get an early start on all that Macworld has to offer.

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- Beginner Digital Photography
- Advanced Digital Photography Day

Powertools
- Aperture
- Adobe Photoshop Lightroom 2
- Photoshop

MacLabs
- Final Cut Studio 2 - Studio Workflows
- Build a Better Workflow with Photoshop

Users Conference
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- Five Ways to Work More Efficiently in Photoshop
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- Adobe Photoshop Lightroom 2 – Workflow for Digital Photographers
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VIDEOGRAPHERS

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- Final Cut Studio 2 – In-Depth
- Mastering the Adobe Creative Suite
- Learning Flash CS4

MacLabs
- Make Your Color Behave
- Final Cut Studio 2 - Studio Workflows
- Final Cut Studio Overview

Users Conference
- Regain Features of iMovie HD in iMovie '08
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- Ask the Editors!

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EDUCATORS

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MacLabs

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- iChat and VIdeo Streaming: Open Student's Eyes and Ears to the World
- Hey, I Have Something Important to Say! Using Podcasting in the Classroom
- Create a Global Learning Perspective with Google Tools in Education
- iWork in Education: Images, Impact, and Interaction
- MacForensics

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- Mac OSX Leopard.....the Purrrrrrfect Cat for your Classroom
- Mobile Learning; iPod and iPhone in Education
- The Google Universe: Tools for Educators
- 21st Century Literacy: iLife and Digital Storytelling in the Classroom
- Staying in Control of Leopard at School

Market Symposium

- K-12 Education

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Be Your Own Assistant

Keep yourself on track with digital reminders and alerts **BY JOE KISSELL**

If I were a high-powered executive, I'd have an assistant to manage my schedule and remind me about deadlines and appointments. But I'm not, so I rely on my Mac and a new breed of online services instead.

You may already schedule meetings and to-do items with Apple's iCal or with an online service such as Google Calendar (★★★★; macworld.com/3643); both provide alarms you can use to notify yourself of impending events. But just because your schedule starts on a Mac doesn't mean you have to stay tethered to one. You can receive alerts via e-mail, SMS text messages, RSS feeds, phone calls, and more. Here are some effective ways to remind yourself about important tasks and events—without hiring an assistant.

ILLUSTRATION BY BRUCE ROSCH

Creating Calendar Alerts

Even if you meticulously schedule appointments and tasks, you still need to remember them. Both iCal and Google Calendar provide multiple types of reminders that can reach you wherever you are, on all kinds of devices.

See It on Screen The most common type of reminder is the standard on-screen pop-up alert. To set one up in iCal, double-click on the event, click on Edit, choose a reminder type from the Alarm pop-up menu (for instance, Message or Message With Sound), and specify when you want the alarm to appear—a set time before the event, on a specific date, and so on. You can set up multiple types of reminders, or ones that go off at different times, by repeating this procedure. (If you don't like the standard reminder window, see "Spice Up Alerts" for a way to customize it.)

Similarly, Google Calendar can display pop-up alerts, but only when you're logged in. Select an event and click on Edit Event Details. Under the Options section, you can customize and add alerts. To create a new one, click on the Add A Reminder link, choose Pop-up, set a time, and click on Save.

Send Yourself an E-mail If you're not constantly sitting in front of your Mac, e-mail alerts can be very useful, whether you check messages on your mobile phone, on another portable device, or on a Windows machine at work.

To set up an e-mail alert in iCal, choose Email from the Alarm pop-up menu, select a time, and then select the e-mail address you want to use (if you have more than one for yourself in Address Book); iCal will include the event's title in the subject of the message, and the note (if there is one) in the body. iCal can send e-mail alerts only when your computer is awake and connected to the Internet, and it works only with Mail. If you use another program as your default e-mail client, you'll have to set up an account in Mail.

In Google Calendar, choose Email from the Reminder pop-up menu, and the program will send a message to the address associated with your account (typically your Gmail address). Google Calendar sends messages even when you're not logged in.

Send Yourself a Text Message There's no reason to miss a reminder just because you're out of the office. If you've got your mobile phone in your pocket, an SMS message can be a quick and much-needed prompt.

In Google Calendar, you'll first have to tweak the settings. Click on the Settings link at the top of the page, and then select Mobile Setup. Choose your country, enter your mobile phone number and carrier, and click on Send Verification Code. An SMS message containing a six-digit number should pop up on your phone. Type that number into the Verification Code field,

click on Finish Setup, and then click on Save. From now on, whenever you want Google to send an SMS alert, choose SMS from the Reminder pop-up menu.

Unfortunately, iCal cannot send an SMS text message directly to a mobile phone on its own. For that, you'll need the help of another program, such as Alco Blom and René Laterveer's SMS Mac ($10 per year and 10 cents per message; www.smsmac.com). You'll have to download the SMS Mac Scripting program and then set an alarm that triggers an AppleScript (as described in the next section), which sends the message via the scripting application. You can find instructions for doing this on the SMS Mac Web site (macworld.com/4079). Depending on your carrier, you may be able to have iCal send an e-mail message to a special address so you receive it as an SMS message—check with your service provider for details.

Specialized iCal Alerts

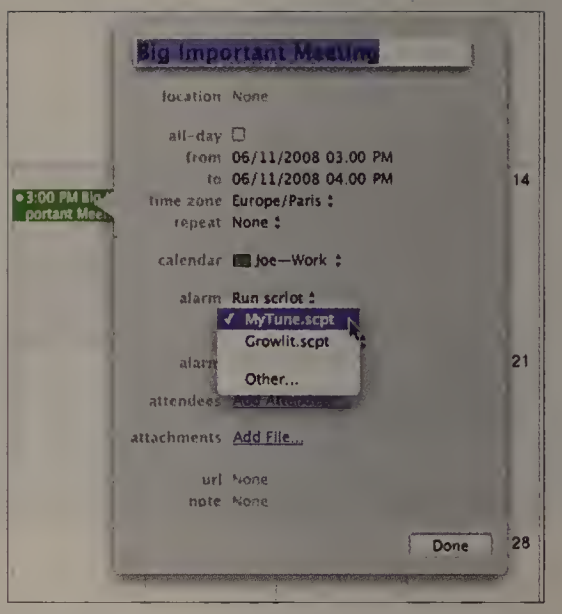
One cool feature of iCal is its ability to trigger certain actions when an alert goes off, from opening a file to playing your favorite tune.

Open Documents You can easily set an iCal alert to open a document or program—useful if you're taking your laptop to a meeting and you want your Mac to automatically open the agenda, a presentation, or another associated document. Choose Open File from the Alarm pop-up menu, select Other from the second menu, and navigate to the relevant document or program. Then set when you want it to open.

Run an AppleScript An iCal alarm can also trigger an AppleScript to run when your scheduled event occurs (see "Script Runner"). Suppose you want to play a particular track in iTunes to set the mood for an important meeting. Open Script Editor (/Applications/AppleScript) and type in the following script, customizing it with the name of a song and a playlist:

```
tell application "iTunes"
      play track "TrackName"
of playlist "PlaylistName"
  end tell
```

Or let's say you've set a reminder to purchase a birthday gift, and you know you'll be shopping at Amazon.com. Instead of having an alert that tells you



Script Runner In iCal, you can run any AppleScript as an alert.

to go to Amazon.com, you can create a script that *takes* you there:

```
  tell application "Safari"
        make new document at
end of documents
        set URL of document 1
to http://www.amazon.com
  end tell
```

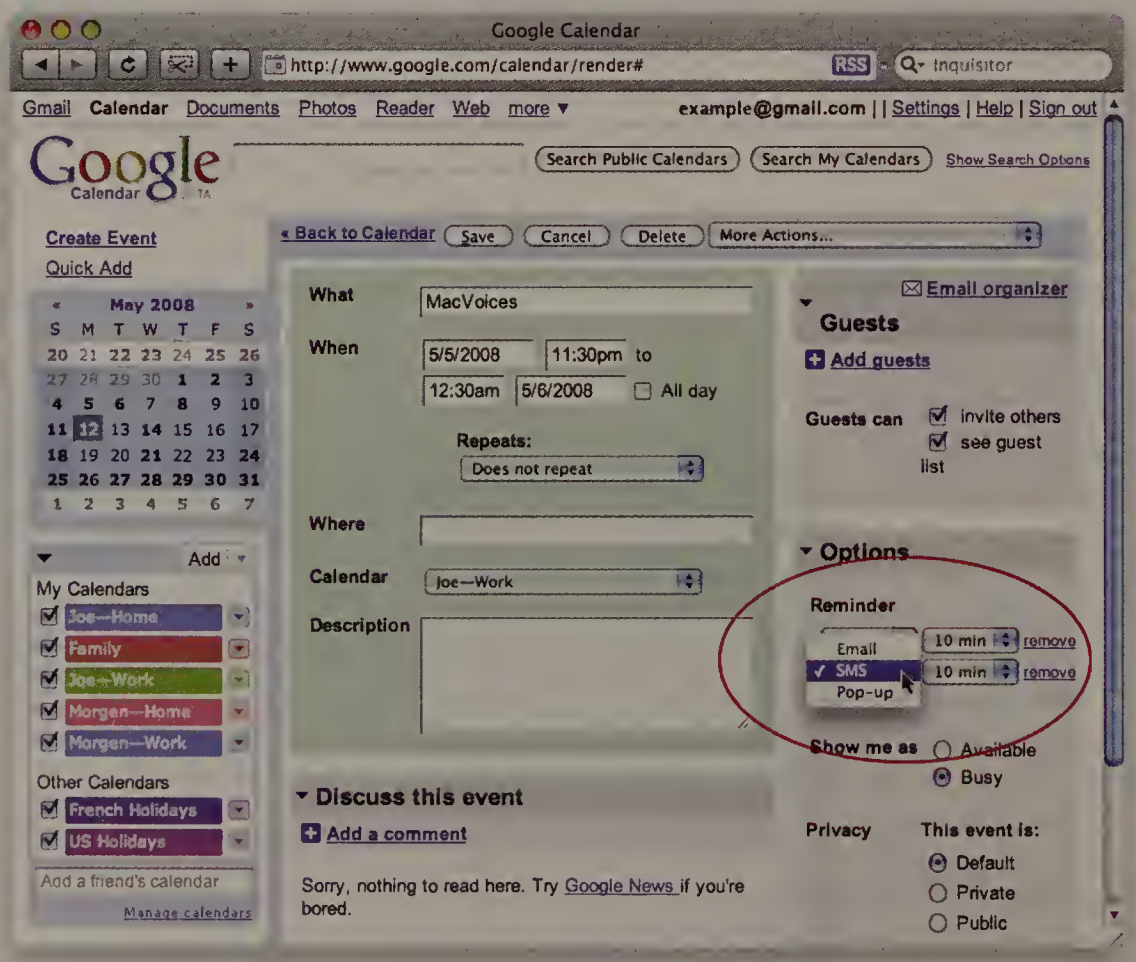
Once you're finished finessing your script, save it. In iCal, choose Run Script from the Alarm pop-up menu, select Other from the next pop-up menu, and navigate to your saved script.

Beyond iCal and Google

In the past few years, many online reminder services have sprung up. These services allow you to create and receive notes and alerts with nearly any Internet-enabled device, or even via a telephone call. Here are three cool services—all free—that let you keep on top of your schedule, even when you don't have access to your main calendar program.

Jott The idea behind Jott Networks' Jott (free [ad-supported]; jott.com) is simple: Register a telephone number with the service, call in, and dictate anything you want, including e-mails to yourself, quick reminders, and to-do items. You can also add events to Jott via the Web site, e-mail, or SMS (using a special Jott address or text number).

Whenever you call Jott from your registered number, the service recog-



Pick an Alert Choose a type of alert—Email, SMS, or Pop-Up—for any Google Calendar event.

Jott Jott's Web-based interface displays reminders, to-do items, and notes.

nizes who you are (using caller ID) and asks you to choose a recipient (for instance, yourself, a list you've set up, a Web-based service like Twitter [www.twitter.com], a contact, or a group). Use keywords to specify what sort of information you want to "jot" down (such as a reminder or a to-do item). Once you've gotten all the specifics down, you can dictate a short message (up to 30 seconds).

Jott uses a combination of computerized speech recognition and human transcription to rapidly turn spoken messages into text. You can check all of your reminders and notes at the Web site, or the service can send reminders via e-mail or SMS. It can even put items on your Google Calendar (you'll have to add Google Calendar to your Jott links first). E-mail reminders include a link to the original voice recording, which is handy if there are transcription errors.

reQall Like Jott, QTech's free reQall service (www.reqall.com) lets you phone in notes and receive reminders via e-mail or SMS. You can also send and receive alerts with an IM client such as iChat.

Online reminder services let you create and receive alerts from any Internet device.

The service turns your to-do items into a feed that you can subscribe to in iCal (but not Google Calendar); it also offers an RSS feed in case you want events to appear in your news aggregator. Unlike Jott, reQall does not currently provide connections to Twitter or a way to add events via e-mail or SMS, though there is an iPhone version of the program, as well as a Firefox plug-in that can grab clippings from Web pages and add them to your list of notes.

Remember The Milk With Remember The Milk (in beta at press time; www.rememberthemilk.com), you can create reminders via a Web interface, e-mail, Twitter, or SMS (using your Twitter account—for more, go to macworld.com/4080). Though the service doesn't have its own speech-recognition interface, you can configure Jott to direct spoken reminders to your Remember The Milk account.

The service delivers alerts via e-mail, Twitter, instant message, SMS, or Atom news feed. To-do items also go into an iCalendar feed that you can access with iCal. A Pro account ($25 per year) includes access to a special iPhone version that lets you view and manage upcoming tasks.

You can keep tasks private or share them, either publicly or with specific people, and those contacts can make changes to shared tasks. If you use Firefox, an offline mode provides browser-based access to all your tasks, even when you're on a plane or otherwise disconnected from the Internet. (This offline mode requires the free Google Gears software, which adds numerous capabilities to supported browsers, including a database for storing data locally.)

The Last Word

With iCal and Google Calendar alerts, along with online services, you can manage appointments and to-do items on almost any connected device, from your Mac to your mobile phone. So you no longer have an excuse for missing your appointments and deadlines.

Joe Kissell is the senior editor of TidBits and the author of numerous e-books (www.takecontrolbooks.com) about OS X.

Spice Up Alerts

When iCal displays an alert (using the Message or Message With Sound alert type), the box stays on screen and floats in front of all other windows until you dismiss it. If that interferes with your work style, try Growl alerts instead.

Growl Team's free **Growl** (growl.info) works with dozens of programs to provide systemwide notifications. After installing the software, you launch System Preferences, select Growl, and choose a look for notices (anything from a tiny, unobtrusive transparent window in the corner of the screen to a huge alert with obnoxious graphics—your choice). You can also pick the position of your alerts and choose the amount of time they stay on screen, along with other options.

Though iCal doesn't support Growl, you can get around this by using imAGn's free **GrowlIt** (www.imagn.net/software) AppleScript. Simply set iCal to run this AppleScript as the alert for any event, and Growl will display notifications the way you configured them.

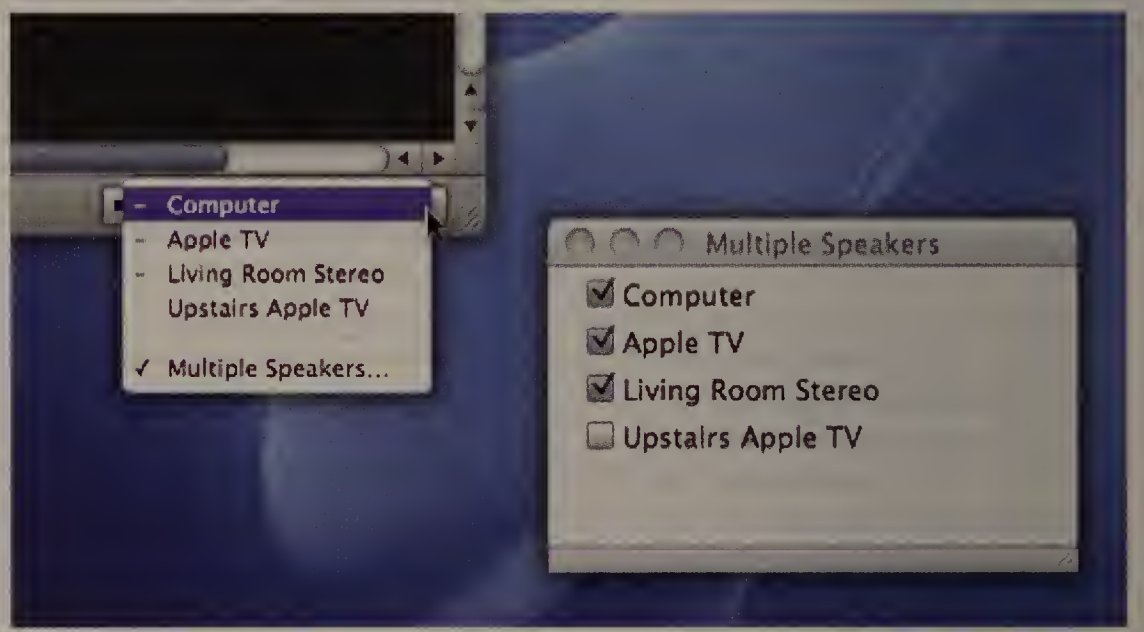
To achieve the same effect with Google Calendar, you must install two free pieces of software (in addition to Growl itself): **Google Notifier** (macworld.com/2752), which informs you of impending appointments and new Gmail messages, and Waffle Software's **Google+Growl** (macworld.com/4081; in beta at press time). Once you configure both, you'll get Growl-based alerts for your Google Calendar events—even when you're not logged in. To disable Notifier alerts and receive only Growl reminders, go to Notifier's Preferences (under its menu-bar item), select the Calendar tab, and deselect the Display Upcoming Event Reminder Pop-Up option.

Control Music Throughout the House

Apple's Remote app puts power in your hands **BY CHRISTOPHER BREEN**

The days when a household had one stereo in the living room are long gone. Today you'll find receivers and speakers scattered throughout—and sometimes *outside*—the house. Wouldn't it be nice to route the same music to different rooms so you can enjoy it as you move around the house?

If you're starting from scratch, you can just buy a whole system—there are some excellent ones out there. But you can also cobble together a bang-up system with equipment you might already have sitting around your house.



Remote Speakers Ask iTunes to look for speakers, and the Remote Speakers pop-up menu appears.

Tools and Setup

A simple setup includes a Mac that houses your iTunes library, one or more AirPort Express base stations or Apple TVs running the latest software, and an iPod touch or iPhone onto which you've installed Apple's free Remote application (4½; macworld.com/3760).

Start by opening iTunes 8's preferences and clicking on the Devices tab. In this tab, enable the Look For Remote Speakers Connected With AirTunes and Look For iPhone And iPod Touch Remotes options and click on OK. The first enabled option causes a Remote Speakers pop-up menu to appear in the bottom right corner of the iTunes window. The second option tells iTunes to let its existence be known to any copies of Apple's iPhone and iPod touch Remote application as they seek out available computers.

If you have an AirPort Express base station, string a minijack audio cable between its audio port and an input port on a stereo receiver or powered speakers. Launch AirPort Utility (found in /Applications/Utilities), select your AirPort Express, configure it so it's part of your network, and click on the Music tab. On this tab, select the Enable AirTunes option, give the Express a useful name (for example, Living Room Music), and click on Update. Your AirPort Express is now ready to receive music streamed to it from iTunes.

If you haven't already, download Apple's Remote app from the App Store. You can do so from your iPhone or iPod touch, or from within iTunes.

Launch Remote on your iPhone or iPod touch. In the Settings screen that appears, click on the Add Library entry. In the resulting Add Library screen, you'll see a four-digit passcode. Move to your Mac, and in iTunes' Source list, you'll see the name of your iPhone or iPod touch with the Remote icon next to it. Click on this icon and you'll be prompted to enter the four digits that appear on Remote's Add Library screen.

If you have an Apple TV, you can set it up now. Navigate to its Add Remote screen (Settings/General/Remotes). Within the Remote application on your iPhone or iPod touch, tap Add Library. Again, you'll see a four-digit passcode on the Add Library screen. The name of your iPhone or iPod touch will appear on the TV screen. Select it and press the play/pause button on the Apple Remote. In the succeeding screen, enter the four-digit passcode using the remote's plus (+) and minus (–) buttons, select Done, and press the play/pause button to pair the Apple TV with the Remote application.

Before leaving the Apple TV, go to Settings/Audio/AirTunes and make sure AirTunes is switched on. This allows your computer to stream music

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to the Apple TV and through any speakers attached to it.

Making It Work

With your iPhone or iPod touch in hand, launch the Remote application and make sure it's connected to your iTunes library (you'll see a check mark next to the name of your computer in the Choose A Library list). Tap on Done. From the bottom of the display, choose Playlists, Artists, Albums, Search, or More (and then one of the selections in More, which include Audiobooks, Composers, Genres, Movies, Music Videos, Podcasts, Songs, and TV Shows). Tap on an item to play it.

Tap the Now Playing screen that appears on your iPhone or iPod touch. You'll see the additional controls sheet that normally appears, as well as a Speakers entry just above the play controls. Tap on Speakers and you'll see a list of all the audio devices that can be connected to the computer's iTunes library remotely—this includes the computer's own speakers, as well as any speakers attached to an AirPort Express and Apple TV. Your audio should be playing through the speakers that have a check mark next to their name. To mute speakers, tap their name and the check mark will disappear. To start more speakers playing, tap their name in the list. The number of currently connected speakers will be reflected in iTunes' Remote Speakers pop-up menu—*Multiple Speakers (3)*, for example.

From this Now Playing screen, you can control the volume coming from speakers attached to your computer, AirPort Express, or Apple TV. The previous, next, play/pause, repeat, and shuffle features work exactly as you'd expect them to.

iPhone Speaker Settings With the Remote application, you can turn sets of remote speakers on and off.

One setup includes an iTunes library, one or more AirPort Expresses or Apple TVs, and an iPhone with the Remote application.

Passcode Enter a passcode provided by the Remote app to establish a connection with iTunes.

What You Might Not Know

When you've configured everything, playing your music from multiple speakers is pretty easy, but there are a few subtleties you might miss.

The Genius Factor When you tap a Now Playing screen, the additional controls area contains the Genius icon. Tap it and you'll create a Genius playlist on your iPhone or iPod touch based on the currently playing song. iTunes will display the contents of this Genius playlist shortly after you tap the Genius icon. If you'd like to save this playlist, tap Edit in the upper right corner of the display and then tap the Save icon that appears in the upper left corner. The playlist will be saved to the iPhone's or iPod touch's list of playlists, as well as to your iTunes library. As with all Genius playlists, it will bear the name of the source track from which you created the Genius playlist. Note that these specific Genius playlists will appear only when you choose the Remote application. They won't be listed among the playlists found in the Music area on the iPhone or iPod touch.

Live Ratings Just as saved Genius playlists will show up in iTunes, so too will ratings. With a track playing, tap the Track List icon, and in the resulting track list screen, tap a star rating—that rating will almost immediately appear in iTunes.

Track List from Album When you play a track, the Track List icon will adopt the album artwork of the currently playing track. Tap the Track List icon, and you'll see the contents of the album from which that track comes, rather than the contents of a playlist you may have chosen. This makes it easy to move to a long-forgotten album when you happen to shuffle through one of its tracks.

Accessing Multiple Libraries The Remote app lets you add multiple libraries—one from your desktop Mac, another from your MacBook, and yet another from your Apple TV, for example. Before switching libraries, however, make sure that you stop playback in the current library. If you neglect to, the first library will likely continue playing its track on the source device while remote speakers play tracks from the newly selected library.

Senior Editor **Christopher Breen** is the author of *The iPod and iTunes Pocket Guide*, fourth edition, and *The iPhone Pocket Guide*, third edition (Peachpit Press, 2008).

Podcasting Guide

Start broadcasting your ideas to the world

BY ALEX LINDSAY

Podcasting means many things to many people: self-expression, self-promotion, or even a career. Regardless of what you plan to do with your podcast, you must produce a quality show if you expect anyone to listen.

Fast Track Ultra M-Audio's four-input USB interface is small enough to take wherever you need it.

Gear

To start a podcast, you need a mic and your Mac. For software, you can record your voice with Apple's $29 QuickTime Pro or GarageBand '08 (★★★★½; part of the $79 iLife suite; macworld.com/3085). But you need a mic that you can position close to your mouth. Your Mac's internal mic picks up too much of the sound around you to be useful. I suggest picking up a USB audio interface and an XLR microphone (mics that use the XLR connector offer more flexibility and potentially higher-quality audio than USB mics do).

My two favorite starter USB interfaces are M-Audio's $130 Fast Track USB (www.m-audio.com) and Centrance's $200 MicPort Pro (centrance.com), which is particularly great for travel.

Either option lets you choose from the literally hundreds of XLR microphones on the market so you can find the right mic for you. Frankly, you are looking for something that makes you sound good. The best thing to do is to go to a store and try a bunch of them. If you don't know where to start, your safest bet is Shure's SM58 Vocal Microphone (about $100 online; www.shure.com). It's relatively inexpensive, has solid sound, doesn't require phantom power (a method of sending power through mic cables), and is nearly indestructible. I have six of these mics and use them often for remote recordings. If your budget allows, you can try Heil's PR 40 ($325 online; www.heilsound.com), which has a clean, warm sound.

If your podcast is going to include more speakers than just you, you'll need to mix everyone together. I like Mackie (www.mackie.com) mixers—they are solid, reliable, and quiet.

You'll need to buy a mixer with at least one auxiliary output (more on this later). The size of the mixer depends on the number of mics you need to mix together. If you get a mixer with six XLR inputs, you probably won't ever need more. If you're thinking about having more than six people talking, I suggest reconsidering that idea (the optimum number is three or four people). On the road, I've taken to using M-Audio's $450 Fast Track Ultra USB interface, which supports individual inputs that you can capture separately into Apple's Soundtrack Pro 2 (★★★★; part of the $1,299 Final Cut Studio; macworld.com/2913), GarageBand, or even QuickTime. By recording the tracks separately, you can address any individual problems later.

Production

Generally, mics sound best if you are within about four inches of the recording surface and speaking across them (if you speak directly into the mics, you will tend to "pop" your *P*'s). By getting up close, you can turn down the input volume and reduce ambient noise. If you are not using a limiter (which protects your audio from peaking), your average peak should be around –12dB to be safe. On the other hand, if you make your recording too soft, you'll mix in too much of what is often referred to as the *noise floor*, the spectrum that all the other sounds inhabit—generally sounds you don't want.

Recording Location You also must consider your location. If I'm looking at a new location to record, I will often hang out there for 30 to 60 minutes to hear

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what kind of ambient sounds occur. People, footsteps, cars, water pipes, and air conditioning can all find their way into your recording if you're not careful. You can't get rid of all of them; but the fewer you have, the easier it will be to get a clean recording. Room *liveliness* is also a consideration. Clap or make a clicking sound in a room you are considering. If you hear an echo, your mic will, too. If you don't have a choice of location, consider mics that have a high level of *off-axis rejection* such as the SM58 and PR 40—they will ignore much of the ambient sound around you. (My team and I record on the show floor at Macworld Conference & Expo with SM58 mics, and the speakers' voices come through clearly.)

Remote Recording Oftentimes, you might have one or more people in different parts of the country or different parts of the world. How do you bring them all together? The easiest way to do this is via Skype, using Ecamm Network's $15 Call Recorder (www.ecamm.com). With it, you record yourself and everyone else on Skype to a QuickTime file. With a good connection, Skype can provide acceptable quality. The key is to make sure that the host is local and sounds good. If, however, you don't have enough bandwidth to do this effectively, you have two options. You can use a box such as JK Audio's $270 Inline Patch (www.jkaudio.com), which lets you record phone calls directly. Or you can create what is called a *double-ender*—essentially everyone records themselves locally and uploads the files to you to mix together later. Double-enders tend to produce higher quality, but if participants don't properly record themselves or upload the file, your podcast is in trouble.

Generally, mics sound best if you are within about four inches of the recording surface and speaking across them.

If you need to mix and match local and remote guests, you need to send the local guests' output to the remote guests. But if you send the raw output back to Skype, your remote participants will hear themselves. So, how do you send only the local folks' output to the Skype folks while ignoring the Skype audio? We call this a *mix-minus*, which means "the mix minus the remotes." To set one up, you use the auxiliary out of your mixer—essentially a separate track that you have independent control over. Making changes here won't affect the final mix. So you can turn the Skype track down in the auxiliary but leave it at full volume for the main mix. The people on Skype hear everyone in the office but not themselves, while you are still recording everyone, everywhere.

EQ Settings Using an application such as Soundtrack, you can adjust the equalization settings of audio podcast recordings to make voices clearer and easier to listen to.

Post-Processing

So now that you have your raw mix, the next step is to clean it up. For us, the first thing we do is normalize the track(s). Normalization looks at the entire track, finds the peak areas, and then increases the volume so that the peaks are at the maximum level. This doesn't really change the audio—it basically just makes it loud enough to fill the range you have. You can normalize (and perform the other adjustments listed here) in GarageBand or Soundtrack.

The next step is equalization, to improve listenability. Women sometimes sound better recorded with a little more bass, while men often need a little less bass and a little more volume around 7k (7,000Hz) to make their words sharper.

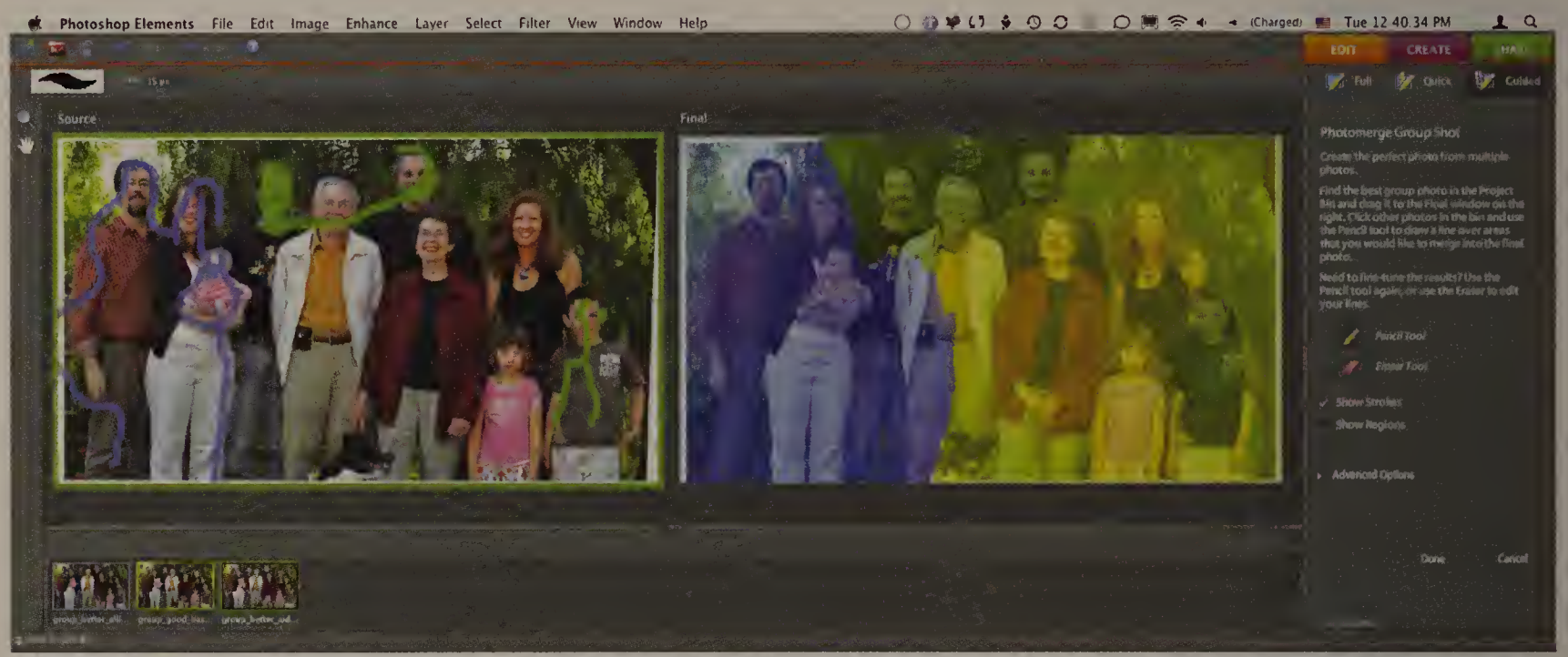
The final step is compression—reducing the variance between the highs and lows. Compressing brings everyone together in volume and makes the sound more intelligible. Generally, you want to squeeze the audio together and increase the volume proportionately to make up for the adjustment. Two-to-one up to four-to-one are pretty good ratios.

From there, you should export the file to AIFF to create a raw, full-resolution version for archiving. Then use iTunes to convert the AIFF file to MP3 or AAC. The benefit of AAC is that it allows you to add chapters and images for listeners by using software such as Lemonz Dream's $30 Podcast Maker 1.3 (version 1.1, ⬆⬆⬆⬆⬆; macworld.com/4085). You can add chapters in GarageBand or Soundtrack, but Podcast Maker is much faster and more predictable.

Alex Lindsay is the founder of the Pixel Corps (www.pixelcorps.com), which produces more than ten podcasts for itself and others.

Get Better Group Photos

Merge the best from multiple shots with Photoshop Elements 6 **BY JEFF CARLSON**



Merged Photos I prefer the baby's position in the photo at left, so I've drawn a squiggle over her to indicate that I want to merge that area with the final image. Elements automatically calculates how much of the area to include, which is indicated with a blue region in the Final image on the right.

You love your family, but trying to capture a good group photo for your annual greeting card can be enough to squelch anyone's holiday spirit. Is everyone looking at the camera? Are they all smiling? Are their eyes open? Before you ditch the whole endeavor, learn how to get a good shot and improve on it with Adobe Photoshop Elements 6 (4½; $90; macworld.com/3505). Its new Photomerge Group Shot feature lets you quickly merge the best parts of multiple photos to work around these issues.

Want to Learn More?

Jeff Carlson will be speaking at this year's Macworld Expo, January 5 through 9, 2008, in San Francisco. Register at macworldexpo.com.

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Set Up the Shot

Elements can do a lot to improve a bad photo, but you'll save postproduction time by getting as good a photo as possible at the outset. You may have little control over certain aspects, such as the weather or the attention span of your subjects (especially if you're wrangling energetic kids); however, a bit of forethought goes a long way.

Consider Your Light Source First, find a location with good light. If you're outdoors, avoid shooting in the middle of the day when the sun creates dark shadows or causes people to squint. One way to work around bright outdoor light is to shoot in the shade. If you're indoors, position the group near windows that let in natural light. Consider adding an inexpensive thin white curtain on a spring-loaded curtain rod to diffuse the incoming light.

The goal is to avoid relying on your camera's built-in flash, which often throws harsh light and gives photos a slapdash, snapshot look. If you have an advanced camera, a much better choice is to use an external flash that attaches to the hot shoe (or that can be triggered remotely). When indoors, for example, aiming an external flash upward, to bounce light off the ceiling, creates far more pleasing light. If the built-in flash is your only option, see if your camera lets you reduce its flash output.

Check for Distractions When setting up the shot, be mindful of anything else that may disrupt the composition. Plants and tree branches are easy to overlook at the time but become all too clear when it appears that vegetation is growing out of someone's ear.

Choose the Right Settings Now, turn to the camera itself. Check that the ISO and white-balance settings are correct. All too often these are left unchanged from a previous shoot. Then turn on your camera's burst mode, which lets you shoot several frames in quick succession. People, espe-

cially kids, rarely stand still: they fidget, sway, blink, and nod, and you never know which frame will be the best one.

If your camera has a telephoto lens, take advantage of it by placing the camera far away from the group and zooming in. This technique makes the subjects stand out by blurring the background. I also recommend using a tripod. Because you'll be merging images later, you want to make sure the camera doesn't move between takes. The tripod will also ensure that your photos are sharp and make it easier for you to set your camera's timer so you can jump in.

Merge Photos in Elements

If you have a lot of people in your group, it's unlikely that you'll find one image in which everyone is looking his or her best. To compensate, Adobe has included some image-processing magic, called Photomerge Group Shot, in Photoshop Elements 6. The feature lets you cherry-pick the best parts from several similar shots to create one perfect photo.

Get Set Up To start, open two or more pictures from your shoot in Photoshop Elements. Each image will appear in the Project Bin at the bottom (if you don't see it, select Window: Project Bin). Now shift-click on each image in the Project Bin you want to use, and select File: New: Photomerge Group Shot.

Elements will take a moment to align each of the images. When it's done, it presents you with the Group Shot work area. The first thing you'll need to do is select a *base image*. This should be the photo that is closest to what you want, because it'll serve as the foundation for your final photo. Drag your base image from the Project Bin to the right pane to set it as the Final image.

Pick and Choose Next, click on a photo that contains an area you want to merge into the base image. That image will appear at the left as the Source. Using the Pencil tool, draw over the area of the source that you want to copy—don't worry about being precise at first; Elements will calculate which pixels to use and transfer those to the base image (see "Merged Photos"). If you have three or more images, repeat this process with each image, penciling in areas you want to merge. Elements assigns each source image a separate color to avoid confusion.

Move back and forth between your images until you're happy with the results in the base image. Unfortunately, making selections isn't an exact science: adding a small pencil-mark can cause Elements to co-opt a large swath of pixels. If you're having trouble, experiment with using smaller and larger pencil sizes. For example, if you made a quick scribble on someone's face, filling in the entire head area may yield a better selection. You can also use the eraser tool to remove your pencil marks and further refine the area. If the merged areas seem wildly off the mark, use the Alignment Tool under Advanced Options to pinpoint identical areas of each photo.

If you're having trouble merging several photos, consider working in pairs: merge the areas of two images, and then, using the new file as the base, merge another image. If the Group Shot feature keeps selecting larger areas than you want, you may have better luck with the Photomerge Faces tool (see "Focus on the Face").

If you're having trouble merging several photos at once, consider working in pairs instead.

Wrapping Up When you're finished, select Pixel Blending under Advanced Options. This softens the areas where different regions join. Then click on Done to see the results.

Elements places your merged image on a new layer in a new untitled document. The bottom layer contains the base image you selected. (To see the Layers palette, click on the Full button under the Edit tab.) If you find that you need to do touch-up work—for example, fixing some overlap in the background where Elements didn't get a perfect merge—you can use these two layers to fix the problem. In the Full editing mode, use the Eraser tool to eliminate the incorrect pixels from the top layer (exposing the source image below).

Final Touch-Ups

Now that you have your merged photo, you can apply last-minute touch-ups and prepare for printing. Perform any minor corrections and sharpen the image if needed. Depending on the size of the greeting card, you'll probably need to crop the image so the edges aren't cut off by the printing service. Choose Crop from the Image menu, and then select a preset size from the Aspect Ratio pop-up menu in the options bar. Lastly, save the image as a Photoshop (.psd) file. This retains all of your edits so you can make changes later if needed. Then choose File: Save As and save a separate JPEG version (set the Quality slider all the way to the right). This is the version you'll send to the printer.

Now, with your annual family photo in good shape, you can turn your attention to the other holiday tasks on your list.

Jeff Carlson is the author of *The Adobe Photoshop Express Beta Pocket Guide* (Peachpit Press, 2008).

Focus on the Face

TIP Sometimes the Group Shot tool is more than you need. If all you want to do is fix someone's closed eyes or merge a small area of the image, the program's Photomerge Faces tool—which is billed as a way to create "funny faces"—may do a better job. With two images selected, choose New: Photomerge Faces from the File menu. Use the Alignment tool to specify identical features in each image (such as both eyes and the tip of the nose), then draw on the source image with the Pencil tool. Click on Done when you're through.

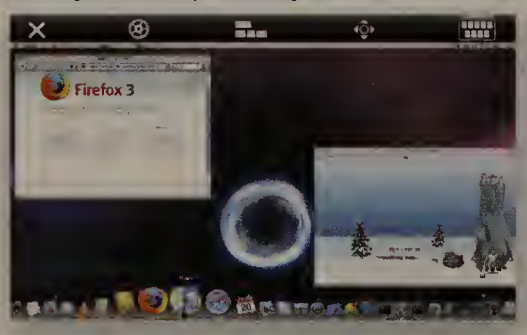
Nine Essential iPhone Business Apps

Get real work done on Apple's smart phone with these utilities **BY BILL WIECKING**

Letting you play music, movies, and games, the iPhone and the iPod touch could be two of the best time-wasters ever built. But with the right third-party applications installed, they can also give you a whole new mobile workspace. No, they can't replace a laptop when it comes to real productivity. But you can use them to stay in touch with your Mac back at the office, update your to-do list when you're away from iCal, and more. Here are nine applications that can help your iPhone and (in some cases) iPod touch make you *more* productive, not less.

Jaadu VNC

If you've used Leopard's screen-sharing feature or Back to My Mac, you'll get what's so cool about Jugaari's $25 Jaadu VNC iPhone app (macworld.com/3830): it gives you screen control over any computer (Mac or PC) that has Virtual Network Computing (VNC) enabled. You can use Jaadu VNC to control any application from your phone—you could, for example, run Keynote or PowerPoint presentations using your iPhone as a clicker. The program includes a rich set of combo keystrokes, so you can do almost anything from your iPhone that you could from your computer keyboard.



SpeechCloud Voice Dialer

Voice-activated dialing usually requires that you train the phone to respond to certain names before you can dial them hands-free. Adela Group's $5 SpeechCloud Voice Dialer ($5; macworld.com/3986) does voice dialing one better: if a name is in your address book, you can dial it by simply speaking the name after touching the app's icon. This is great not only if you're too busy to dial, but also if you want to keep your hands free—for, say, typing on your laptop.

SugarSync

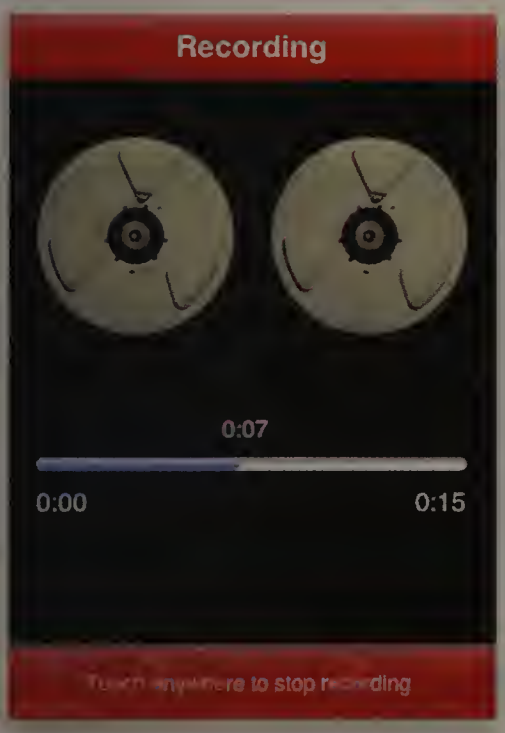
Apple's MobileMe is supposed to keep current copies of your files, calendars, and contacts in a "cloud," accessible from any of your Macs or iPhones. But in practice, it doesn't always work so well. That's why we still need an app like Sharpcast's free SugarSync (macworld.com/3985) and the service that goes with it. SugarSync has both Mac and iPhone components: drop a file on the Mac app to upload it to Sharpcast's servers, and a pointer to it will then show up on your phone. You can view the file or (without waiting for it to download to your phone) e-mail it to others. SugarSync works with Word, Excel, PowerPoint, and PDF files as well as photos, and it's a great way to share documents with others when you're on the road.

Dial Zero

If you need to quickly find a customer service number for your (fill in whatever mission-critical piece of business equipment is on the fritz), the free Dial Zero (macworld.com/3982) will do it for you. This simple database from Next Mobile Web contains customer service numbers for more than 600 companies (even Apple). Best of all, these aren't numbers that'll dump you into some interminable voice-mail hell; they take you directly to a live person.

Note2Self

While the free Jott for iPhone (below) transcribes your voice memos, Web Information Solutions' $3 Note2Self (macworld.com/3983) does not. So why would you want pay $3 for it? Because once you've recorded your voice memo, Note2Self will automatically send it to any e-mail address you specify; the free Jott doesn't offer the e-mail part. Also, you can record without pressing any buttons; the software uses the iPhone's accelerometer and proximity sensor to begin recording when you lift the iPhone to your ear (or simply shake it). It also automatically tags messages by location.

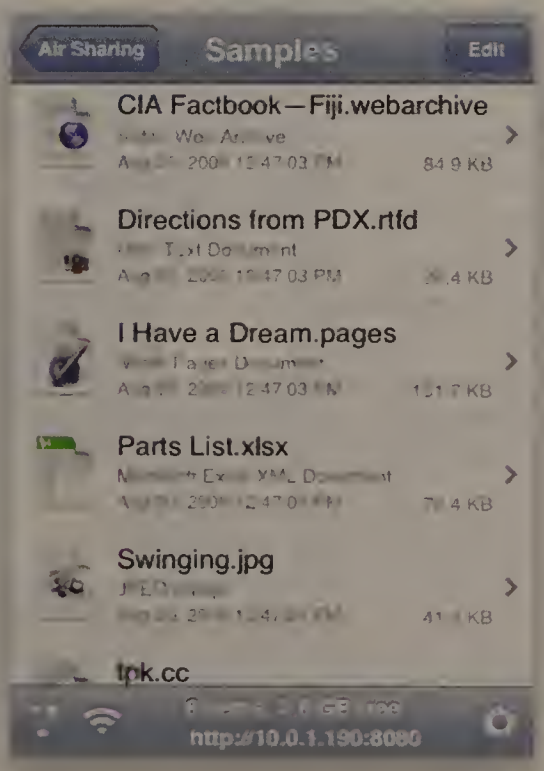


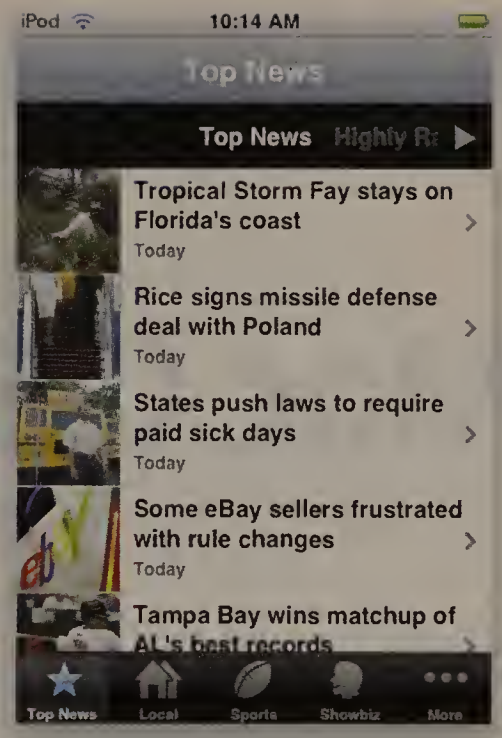
Jott for iPhone

Jott is a service that lets you dial a toll-free number and leave yourself a voice memo; the service then transcribes that memo into text and sends it to you via e-mail. The free Jott for iPhone (●●●; macworld.com/3754) app extends that service to the iPhone. After you dictate whatever you want into your iPhone (15 seconds max), your voice note is sent to Jott's server, where it's converted to text; that text is then synced back to your iPhone. (If you need to receive the text on your Mac, this isn't the solution for you; if you want to get your note via e-mail and don't need it transcribed first, see Note2Self above.) The basic Jott service is free, with two upgrade plans: $4 per month lets you send e-mail and text messages from any phone; the $13-per-month Pro plan lets you record 30 seconds at a time.

Air Sharing

Software vendor Avatron claims that (at press time) 10 percent of all iPhone users have downloaded its $7 Air Sharing (macworld.com/3989). If you aren't one of them, you should be: Air Sharing lets you mount your iPhone or iPod touch as if it were a wireless thumb drive, accessible from any Mac, Windows, or Linux computer. Let's say you're headed to a meeting. Before you go, you drag and drop files onto your iPhone. At the meeting, to share one of your files, you activate Air Sharing's built-in file server (which works over a local wireless network); your iPhone can then be mounted like any other network volume. Air Sharing handles scads of document types (including Microsoft Office, iWork, and PDF) and offers extensive built-in help.





Mobile News Network

If your job requires that you know what's going on in the world, you need the free iPhone version of the Associated Press's great Web app (●●●½; macworld.com/3759). It gives you easy-to-read screens of news in all sorts of categories—including finance, politics, and sports. And it's not like browsing a news site with the iPhone's version of Safari: the screens are specifically optimized for viewing on the iPhone and are easy to read even if you're in a hurry. It's a great way to stay informed when you're on the move.

WhitePages Mobile

You're on the road and you need to find a phone number. Dialing directory assistance seems so 20th century (not to mention wasteful). Instead, you can look up any of 180 million U.S. phone numbers using WhitePages.com's free WhitePages Mobile app (macworld.com/4093). It also lets you populate your call log with real names.

Bill Wiecking regularly speaks on mobility and wireless topics. He lives in Hawaii.

Mac OS X Hints

The insider tips you won't get from Apple **BY ROB GRIFFITHS**

Access Hidden Controls for the iTunes 8 Visualizer

Apple's iTunes 8 (4½; macworld.com/3886) features a new visualizer that creates even more interesting shapes and colors that flicker and pulse on screen as you listen to music (see "iTunes Fireworks"). To see its options, choose View: Show Visualizer or press ⌘-T, and then call up its help screen by pressing the question-mark (?) key. Here you'll find that you can press M to change modes, P to change palettes, N to toggle nebula mode on and off, and much more.

But there are a bunch of options you won't find listed in help—those left over from the days of yore, when the visualizer was an iTunes plug-in—The Barbarian Group's Magnetosphere. Press the plus-sign (+) or minus-sign (–) key to increase or decrease the intensity (brightness) of the particles. Press them multiple times to further increase or decrease the intensity. Press the A key to Add or the S key to Subtract particles from the visualizer. You can make the visualizer as complex or sparse as you wish using these keys. Press the R key to reset the intensity and particle count to their default values. Press the E key when you're in nebula mode to greatly accentuate the smoky nebula clouds, making them very easy to see.

iTunes Fireworks The new iTunes visualizer accompanies your music with lots of exciting visuals—especially if you know some hidden keyboard commands.

Quickly Access Grid View Options in iTunes 8

If you often struggle to find the right tune in your enormous iTunes library, you're probably excited to hear about the new Grid view (View: As Grid) in iTunes 8. It lets you visually group your music by album, artist, genre, or composer, offering a different look at your music collection.

Depending on the arrangement you've selected, you can further group and sort your music in Grid view. Just take a trip to the View menu after you click on the Albums, Artists, or Composers button at the top of the window. (There are no options for the Genres tab.) Click on Albums, for instance, and a Group Albums option appears in the View menu. Select this, and your albums sort into alphabetical groups based on the artist's name. The Albums view also hides an additional option. Using the View: Sort Albums menu item, you can sort your albums by title, artist, genre, year, or rating, in either ascending or descending order. Then, depending on the sort order you've chosen, you may be

MUG PHOTOGRAPH BY PETER BELANGER

Have a Hint to Share?

Go to MacOSXHints.com to submit it. This column was based on tips from Tomis Erwin, Aylwin Lo, Alex Tayts, and anonymous contributors. Each month, the author of our favorite tip receives the *Help Desk* mug.

able to set a secondary sort within the primary sort—sort your albums by year, for example, and then by artist name within the year.

One tidbit can make accessing these view options less mouse-intensive. Instead of heading for the View menu, control-click on the row of buttons (see "iTunes Sorting Shortcut"). A contextual menu appears, mimicking the options available in the View menu for the currently active grouping method.

Save Time Editing International Addresses

Do you have a lot of friends or colleagues in different countries? To specify the country format for a given entry in Apple's Address Book, select that entry in your list of contacts and then click on Edit. Click on the word Work or Home next to that contact's address, and a drop-down menu appears. The last entry in the drop-down menu is Change Address Format. Move your mouse over this entry, and a huge list of countries appears. Select the right one and you're done...sort of.

If you're dealing with imported records or records that you entered yourself, you'll notice that the Country field remains blank after you select something in the drop-down menu. You have to go back and *type* the name in the Country field to finish your edits. There is, however, a slight shortcut for this. As it turns out, if there's any text in the Country field, Address Book will replace it with the name of the country you choose in the Change Address Format menu. So before you use the drop-down menu to set the address format for a contact, type something—a single *a* or *b*, for instance—into the field.

Get More out of Mail's Data Detectors

Mac OS X 10.5 (Leopard) introduced the "data detectors" feature to Apple's Mail. These time-savers recognize dates, times, and addresses in e-mail messages and give you the ability to add those items to iCal or your Address Book with just a few clicks. When Mail's data detectors find a date or time in the body of an e-mail message, a dashed box and drop-down arrow appear when you hover your mouse over that data. Click on the arrow, and a drop-down menu appears with two options: Create New iCal Event and Show This Date In iCal. If you choose to create a new iCal event, a dialog box appears within Mail. Enter the event's location, calendar, alarm, and other data, and then click on Add To iCal.

While this is useful, there are some limitations. The pop-up box in Mail lacks some of the fields you find when you work within iCal—for instance, the options to add attachments, attendees, or a URL are missing. Also, you can't add multiple alarms to events created with this dialog box in Mail. To do these things, you typically must switch over to iCal, find the newly added event, and then edit it as needed.

But there's a better way, thanks to the power of the option key—and you have not one but two chances to use it in Mail. If you know right away that you'd like to use iCal to edit the event you'll be adding, press and hold the option key before clicking on the data-detector box. With the option key held down, the pop-up menu will read Create New Event In iCal (instead of Create New iCal Event). Select this, and iCal will launch (if it's not already running), and a new event will appear based on the information you clicked on in Mail. Click on the Edit button to edit all the typical iCal fields for an event, and then click on Done.

WHAT'S ONLINE

Restore Screen Sharing Buttons to 10.5.5 Bring back power screen-sharing features after upgrading to OS X 10.5.5 (macworld.com/4082).

Sync Devices in iTunes via Keyboard Shortcut Save yourself clicks and assign a keyboard shortcut for syncing your iPhone or iPod (macworld.com/4083).

Stop iTunes 8 from Adding Track Numbers to File Names It takes a trip to Terminal (macworld.com/4084).

iTunes Sorting Shortcut Control-click on the tab titles in iTunes 8's new Grid view for a shortcut to the sort options menu.

Want to Learn More?

Rob Griffiths will be speaking at this year's Macworld Expo, January 5 through 9, 2008, in San Francisco. Register at macworldexpo.com.

What if you didn't realize that you wanted all the data fields as you were selecting the Create New iCal Event menu item? Press option after the new-event dialog box appears on the screen, and the Add To iCal confirmation button changes to read Edit In iCal. Click on that button, and the event will open in iCal. Click on Edit to change the entry.

Choose a Permanent Startup Disk at Boot Time

If your Mac has multiple bootable disks—via either a partitioned internal disk or external FireWire drives—you're probably very familiar with the Startup Disk pane in System Preferences. As you can guess from its name, this pane controls the volumes your Mac uses when it starts. You're probably also familiar with the Startup Manager, which appears if you hold down the option key during startup. The Startup Manager allows you to override the default boot disk and choose another to boot from for the current session—but doing this won't change which disk it uses next time.

What if you want to permanently start booting from the selected volume? Typically, you'd let the Mac boot from your chosen disk, and then you'd go into the Startup Disk preference pane and set that same disk as the startup disk. Depending on the particular Mac you own, however, you might be able to use a shortcut.

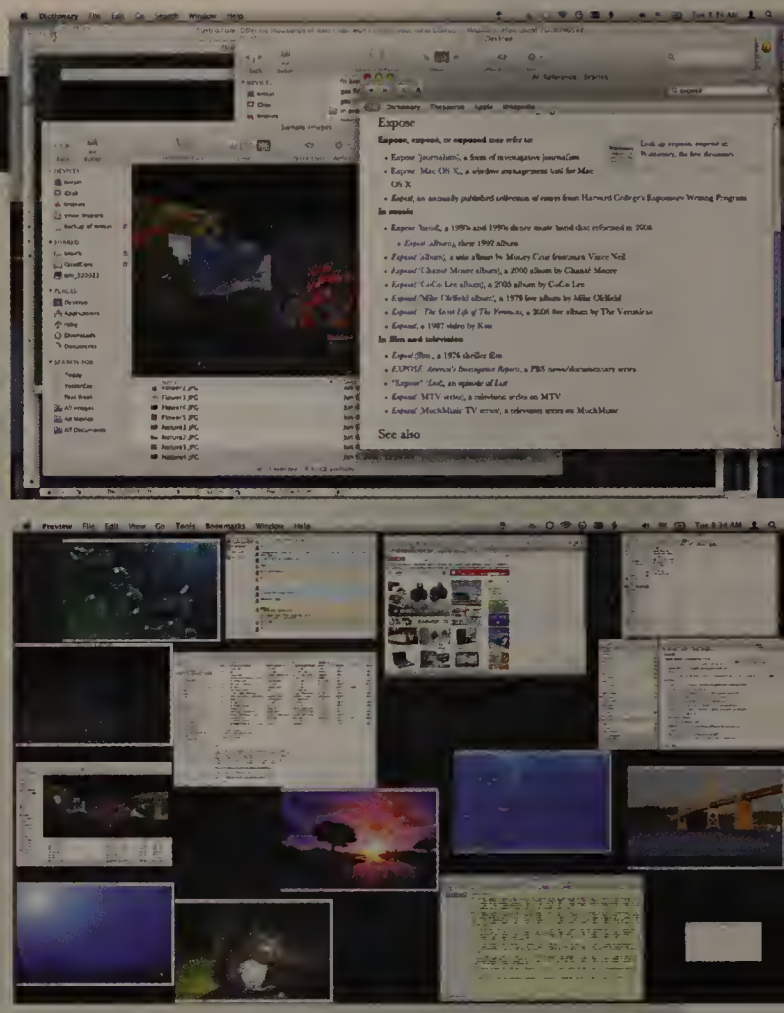
Start up your machine with the option key held down to invoke the Startup Manager, and then hold down the control key and click on a volume you want to use. (You may have to press the left and right arrow keys to select a volume first.) If this trick is supported on your Mac, you'll notice that the upward-pointing arrow—the one that points to the selected disk—will change into a circular arrow instead, indicating that the chosen disk will not only be used to start your Mac this time but will also become the default boot disk.

Senior Editor **Rob Griffiths** runs the MacOSXHints.com Web site.

OS X 101

Exposé Exposed

One of the problems with having a fast, stable operating system like OS X is that you tend to open many programs at once. The more you use, the more inevitable it becomes that windows from one program obscure those from another. OS X gives you lots of ways to find windows—you can use ⌘-tab to switch to the program that owns the window, or you can click on a window to bring it to the foreground. But what if your screen is completely littered with windows? Or what if you'd like to reach something that's buried on your desktop?



View Open Windows Easily When you can't find a window because your desktop is covered with them (top), press F9 to reveal all of them at once (bottom)—and then just click on the window you wish to activate.

Explore Exposé's Modes Enter Exposé, OS X's built-in window-management tool. Exposé has three modes, and each has a different role in managing windows. Use it to shrink and arrange open windows so you can see all of them at once by pressing F9 and then clicking on the window you want to activate (see "View Open Windows Easily"). Use Exposé to shrink and arrange all the windows within a given program by pressing F10 and then clicking on a window. Or press F11 to slide all open windows off the screen temporarily so that you can see your desktop. Press a key once to activate the Exposé mode; press it again to deactivate. If you'd prefer to activate the mode temporarily, press and hold the relevant key. When you release it, you'll return to your normal view.

Tweak the Shortcuts To adjust Exposé's settings in Mac OS X 10.5, go to the Exposé tab of the Exposé & Spaces pane in System Preferences. Here you'll see the default keyboard shortcuts used to invoke Exposé. Change these by clicking on the pop-up menu next to each mode. To disable a mode completely, set the pop-up menu to the last entry in the list—a hyphen (-). Use the second set of pop-up menus to the right to assign mouse buttons to Exposé actions.

While it may appear that you're limited to the keystrokes shown in the menus, that's not completely true—you can't change the keys themselves, but you can add modifier keys. Activate a pop-up menu; then press and hold shift, ⌘, option, or control; and you'll see symbols for those keystrokes appear before each key in the list. For instance, as an alternative to using F11, I can press control and my second mouse button (I have only a two-button mouse) to view the desktop when I already have my hand on the mouse, so that I don't have to move the other hand to reach for F11.

Combine Exposé and the Application Switcher Exposé comes in handy in some unexpected ways. For instance, if you combine the F10 (application windows) shortcut with Application Switcher's ⌘-tab, you can easily see all open windows in each application, one application at a time. Press F10 to enter Exposé's application-windows mode, and then press ⌘-tab to open Application Switcher. Choose the desired program, and when it activates, it will also appear in application-windows mode. Repeat as you wish, and press F10 when you're done to return to your normal view.

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Mac 911

Solutions to your most vexing Mac problems **BY CHRISTOPHER BREEN**

Get Past the Limits of iPhoto Slide Shows

Q: I can create a marvelous slide show with Apple's iPhoto, but I can't do anything with it—can't post it to MobileMe, can't drag it to my iDisk, can't drag it to my desktop. If I want to share it, the only thing I can do is export my photos to iMovie, create a mini-movie with my still photos, and then save it and hope my PC friends can see it. Am I missing something?

Barbara Mehlman

A: As you suggest, you can't create a slide show in iPhoto and simply drag the thing to the desktop. Similarly, when you create a slide show, the commands under iPhoto's Share menu do you little good. However, getting a slide show onto Apple's MobileMe site (www.me.com) is easy.

Your first option is to create your slide show in iPhoto and then choose File: Export (see "Slide-Show Export"). In the resulting Save As sheet, you'll see three size options for exporting your slide show as a QuickTime movie. Whichever you pick, the resulting movie will contain all the pictures in your slide show as well as any music and Ken Burns effects you've added. Post this movie to MobileMe or as an iWeb page.

If you have iPhoto '08 (♦♦♦♦; macworld.com/3061), you can choose instead to create an album of the photos that you'd like to display, click on the MobileMe button, and then publish that album as a MobileMe Gallery. When people visit the gallery, they'll have the option to view the images as a slide show. The slide show won't have music or Ken Burns effects; that limitation matters little to me in a Web-based slide show, but if it's important enough to you, you'll probably want to make a movie instead.

Slide-Show Export Using iPhoto's Export command, you can export a slide show as a QuickTime movie in one of three sizes.

Have a Problem?
Go to the Mac 911 forum (macworld.com/2467) for help with your misbehaving Mac or applications.

Store Files in a Cross-Platform Disk Image

Q: I need a disk image file that can be read on a Windows PC. Thing is, I can't figure out how to do it on my Mac. What's the secret?

Forrest Bourke

A: For those who are unfamiliar with the concept, a *disk image* is a single file that holds an exact copy of a file system or directory. For example, a CD, a DVD, or a hard drive can be turned into a disk image file. You use these files to easily move file systems from one computer to another, or to back up a directory. The secret to creating a Windows-friendly ISO (International Standards Organization) file on the Mac is preparing the disk image correctly and then invoking a Terminal command to convert it. Try this:

Create a folder of the stuff you want to put in the disk image file. Launch Apple's Disk Utility (in /Applications/Utilities) and choose File: New: Disk

Image From Folder. In the Select Folder To Image dialog box that appears, select your folder and click on Image. In the resulting New Image From Folder dialog box, choose DVD/CD Master from the Image Format pop-up menu and None from the Encryption pop-up menu. Save the image to the desktop.

Now launch Terminal (/Applications/Utilities) and type these two commands, pressing return after each one:

```
cd ~/Desktop
hdiutil makehybrid -iso -joliet
-o Example.iso Example.cdr
```

(Change the names *Example.iso* and *Example.cdr* to reflect the actual name of your image—Photos.iso and Photos.cdr, for example.) Terminal will do its stuff, and you'll be presented with a spanking-new cross-platform ISO file.

Change Pages' Default Fonts

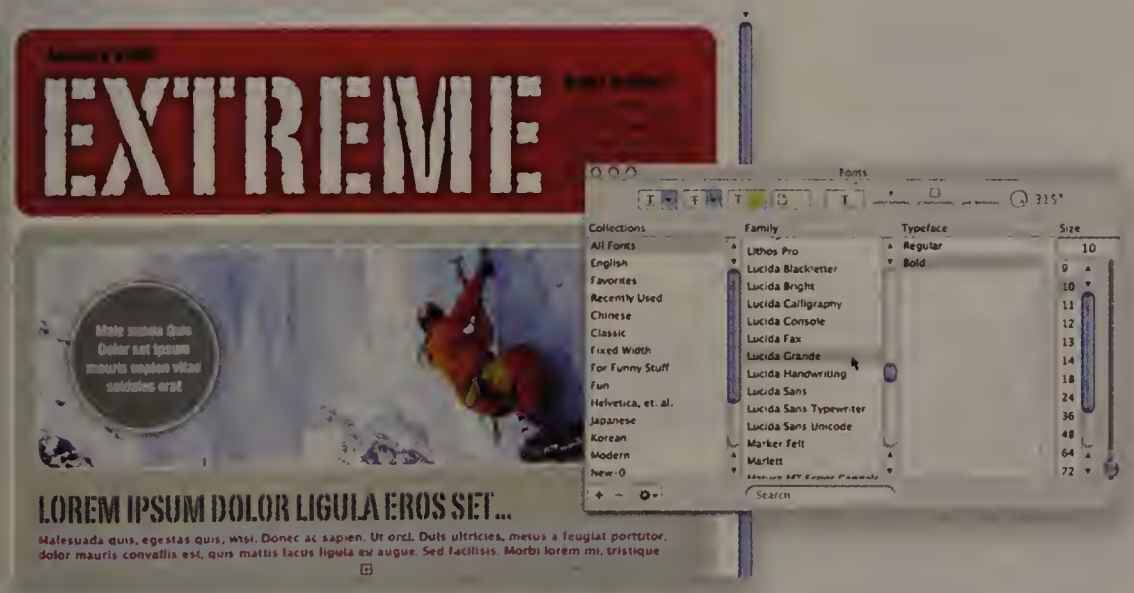
Q: I've searched Apple's Pages in vain for a setting that lets me change the default font used for all new documents just like I can in Microsoft Word. How do I go about doing this?

Marcin Szablewski

A: There's no default font setting in Pages, and, as you'll learn shortly, there isn't one for Microsoft Word either. When you launch Microsoft Word, it opens a blank document. This blank document is based on a template called Normal. By default, Microsoft Word 2008 uses the Cambria font for this template. Were you to open the Project Gallery (File: Project Gallery) and choose a different template—Word Notebook Layout, for example—you'd find that it uses a font other than Cambria.

Pages is similarly based on templates. The difference is that when you launch Pages, it doesn't automatically open a blank page. Instead, you're asked to choose a template for your document. (You can disable this behavior by enabling the Don't Show This Dialog Again option, which will then cause Pages to open with an empty page based on the Blank template.)

To change the default font of a template, all you need to do is open one you like, further modify it to your liking—change the font and font size, for example—and then choose File: Save As Template (see "Editing Pages' Templates"). Save the template to the My Templates directory (which appears by default in the Export As sheet that appears). If you'd like to always start with that template, select Pages: Preferences and click on the General tab. Enable the Use Template option in the For New Documents area, click on Choose, select My Templates in the sheet that appears, and then select the template you created.



Editing Pages' Templates If you always want to use a certain font for your Pages documents, edit an existing Pages template and then save that as your default template.

Senior Editor **Christopher Breen** is the author of *The iTunes and iPod Pocket Guide*, fourth edition, and *The iPhone Pocket Guide*, third edition (Peachpit Press, 2008).

Bugs & Fixes BY TED LANDAU

Noisy Hard-Drive Nuisances As your hard drive begins to chatter loudly, the responsiveness of your Mac drops to near zero. The simplest remedy is to restart your Mac. Alternatively, you can launch Apple's Activity Monitor (/Applications/Utilities) and see if one process shows an alarmingly high CPU percentage (in excess of 70 percent). If Activity Monitor cites SyncServer as the CPU hog, Apple suggests resetting the SyncServices folder (located in *your user folder*/Library/Application Support). Do not delete this folder. Instead, follow the procedures detailed in an Apple Knowledge Base article (macworld.com/4168). A minor downside is that you will next need to reset your MobileMe syncing options. If SyncServer is not the culprit and you have this problem frequently, consider getting more RAM. Excessive disk activity can definitely be a symptom of insufficient memory.

Adobe Printing Errors Having trouble with your Adobe Illustrator, InDesign, or InCopy pages suddenly printing oddly? This could be the result of a bug that appeared after the release of the Mac OS X 10.5.5 update. The simplest workaround is to export your file as a PDF and print it from Acrobat or Adobe Reader. Alternatively, from your original Adobe program, select Print and navigate to the Printer Features options. From here, change the printing resolution back to 600 dpi. Unfortunately, you'll have to do this every time you want to print something. Hopefully Adobe will release an update that fixes this problem soon.

Senior Contributor **Ted Landau** is the founder of MacFixIt (www.macfixit.com). Share your problems at bugs@macworld.com or on Macworld.com's Mac 911 forum.

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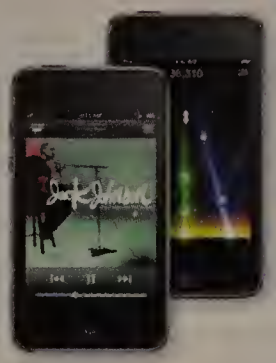

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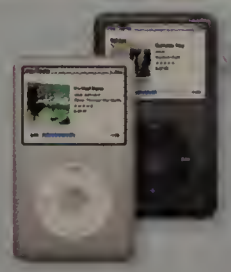

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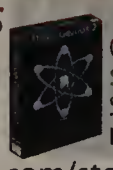

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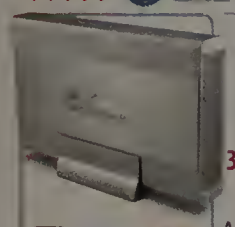

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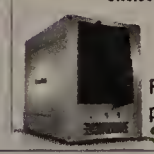

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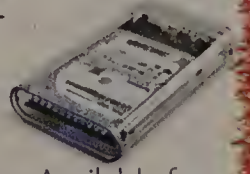

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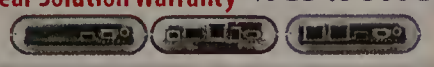

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Acme Made	acmemade.com	117
Aiptek	aiptek.com	40
Ambrosia Software	ambrosiasw.com/mw	47, 65
AmericasPrinter.com	americasprinter.com	123
APC	apc.com	49
Apple Computer	apple.com	C2-1
BeLight Software	belightsoft.com	50
Biomorph	biomorph.com	119
Booq LLC.	booq.com	39
Brother	brother.com	7
Buffalo Technology	buffalotech.com	67
Circus Ponies Software, Inc.	circusponies.com	77
Cognito Software, Ltd.	moneyworks.ca	115
Creativity, Inc.	logo2020.com	118
Crucial Technology	crucial.com/macworld	69
Data Robotics	drobo.com	13
Dr. Bott	drbott.com	22-23
DriveSavers Data Recovery Inc.	drivesavers.com	123
EazyDraw	eazydraw.com	114
ESS Data Recovery	datarecovery.com	124
Fasthosts	fasthosts.com	79
FatCow Hosting	fatcow.com/mac	124
Fortte	fortte.com	117
Freeverse	freeverse.com	10, 12
Fujitsu	us.fujitsu.com	20-21
G-Technology	g-technology.com/macworld	15
Gefen	gefen.com	118
Global Print Runner	printrunner.com	120
Granite Digital	granitedigital.com	120
IGG Software	ibank3.com	113
iHome	ihomeaudio.com	43
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Insight Cruises	insightcruises.com	116, 124
iSkin	iskin.com	11
Journey Educational	journeyed.com	125
Kerio	kerio.com	51
Keynote Theme Park	keynotethemepark.com	118
LaCie	lacie.com	17
Mac of All Trades	macofalltrades.com	127
Macally	macally.com	116
Macessity	macessity.com	118
MacHighway	machighway.com	125
MacMall	macmall.com	4, 108-109, C4
MacSpeech.com	macspeech.com	113
MacTank	mailtank.com	118
Mariner Software	marinersoftware.com	118
Marware	marware.com	116, 117
mAudio	maudio.com	19
MegaMacs	megamacs.com	126
Micromat	micromat.com	35
MicroReplay	microreplay.com	127
Mindwrap	mindwrap.com	115
Neat	neatreceipts.com/mac	63
onOne Software	ononesoftware.com	38
Other World Computing	macsales.com	C3, 110-111
Parliant	phonevalet.com	42
PowerMax	powermax.com	127
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Prosoft Engineering	joesoft.com	72-73
Rain Design	raindesigninc.com	119
Ramjet	ramjet.com	126
RichardSolo	richardsolo.com	2-3
Rosetta Stone	rosettastone.com	105
SeafoodByNet.com	seafoodbynet.com	124
Sedna	activatethespace.com	115
Sharpdots	sharpdots.com	123
Sympatico	macpadd.com	119
Software MacKiev	mackiev.com	26-33
TechRestore	techrestore.com	122
Toon Boom	toonboom.com	114
X-Gear	xgearlive.com	117
ZAGG	invisibleshield.com	119
Zco	zco.com	126
Zoo Printing	zooprintingtrade.com	122

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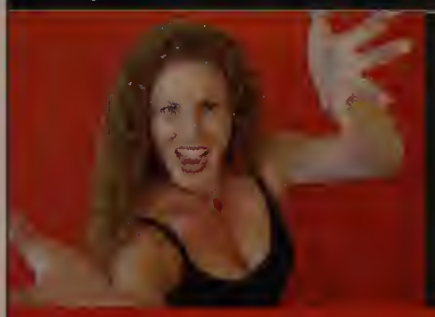

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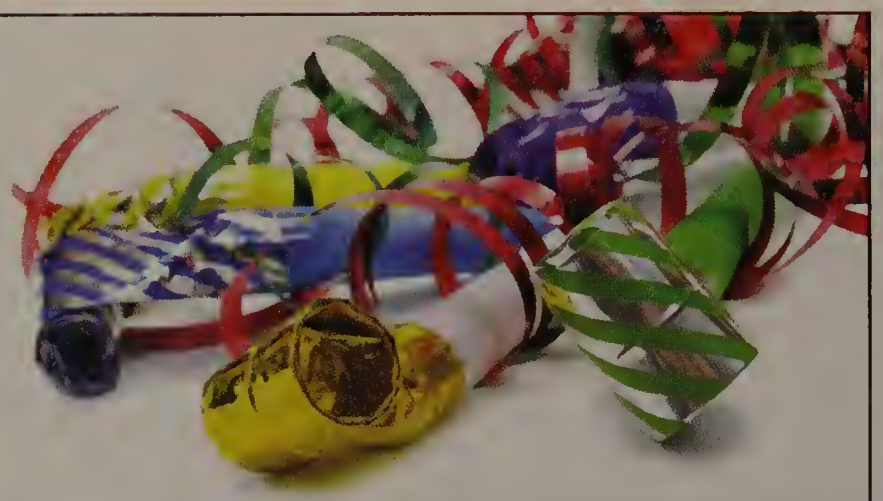

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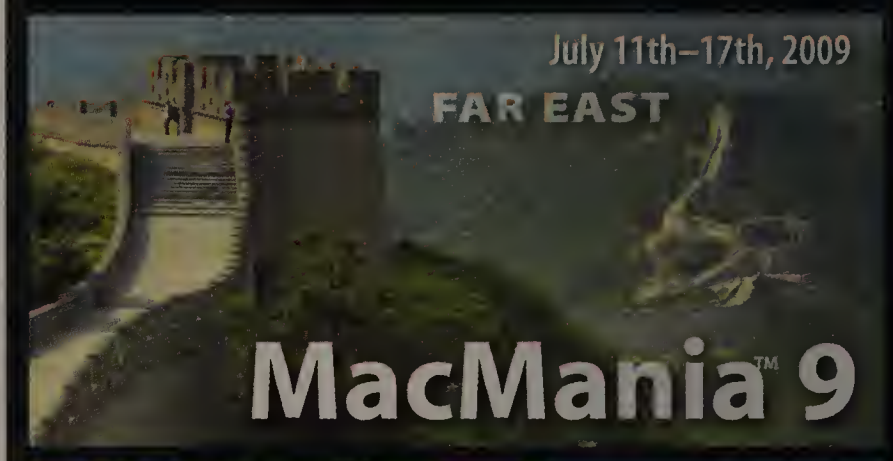

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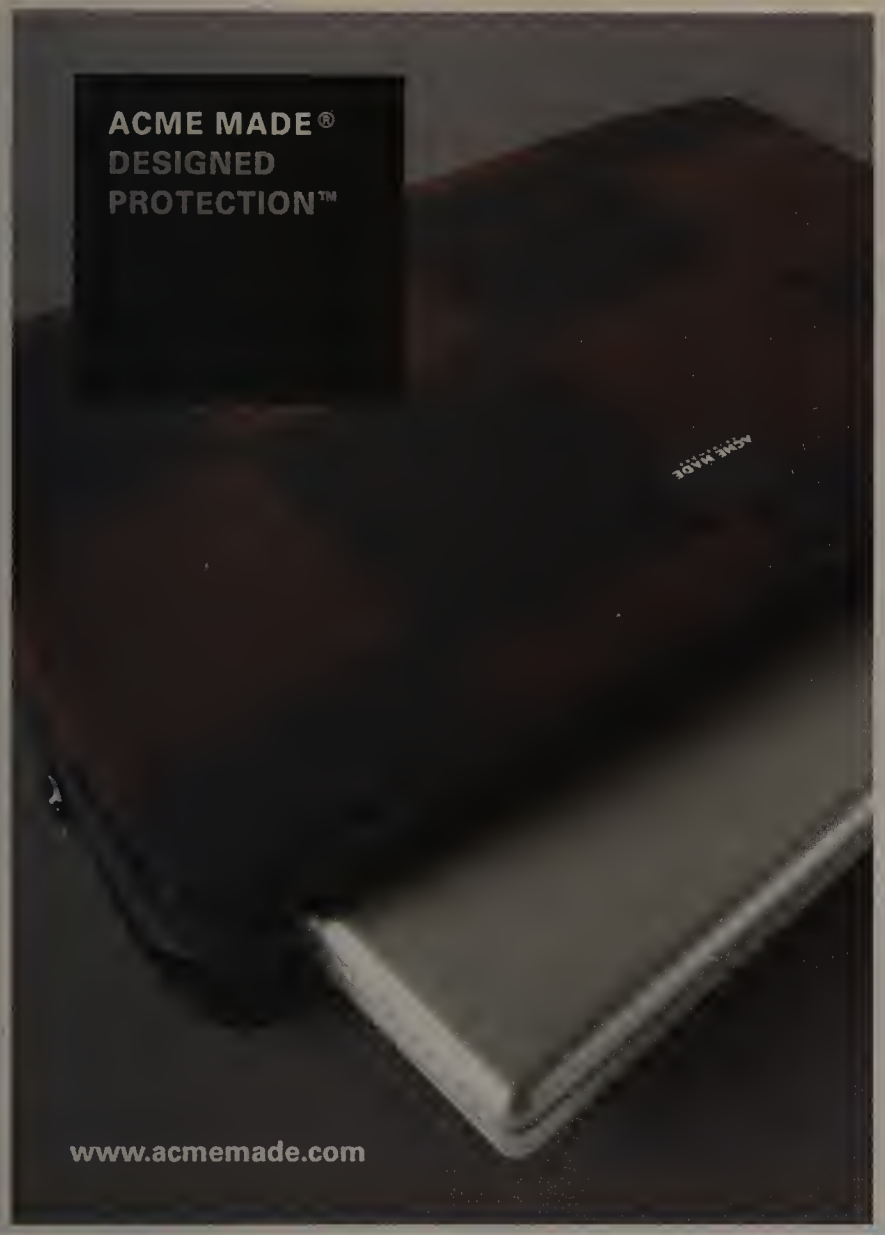

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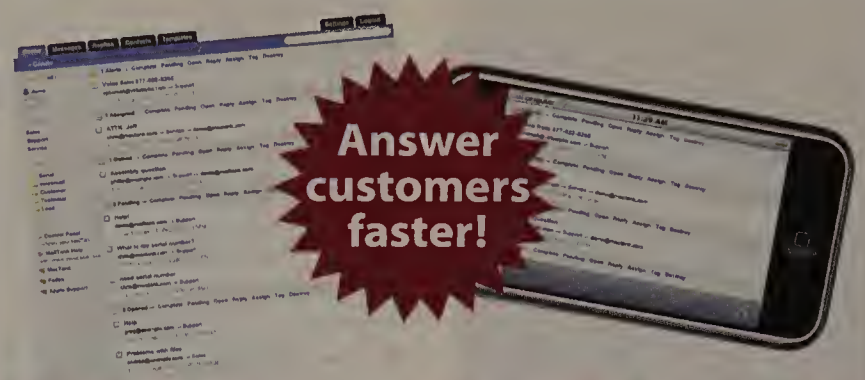

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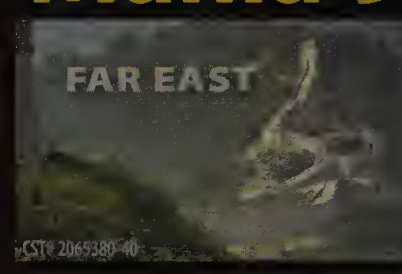

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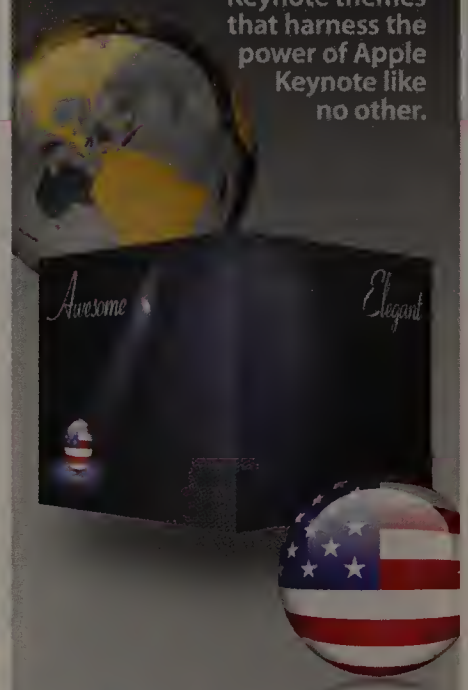

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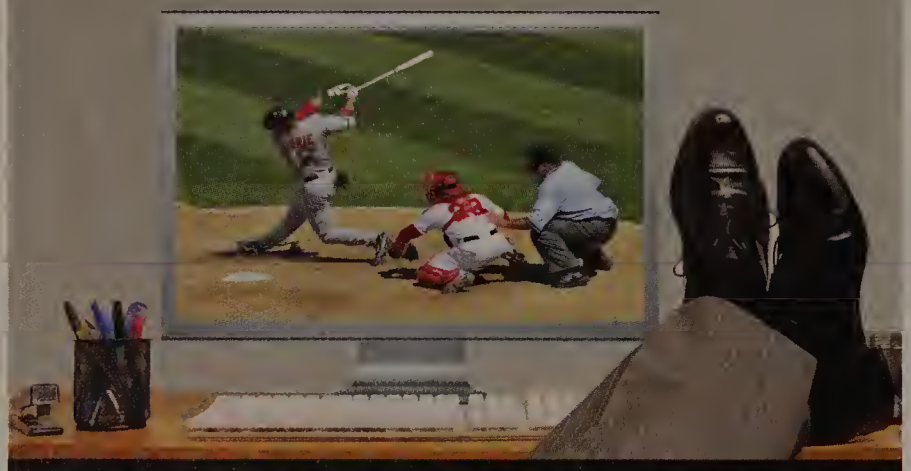

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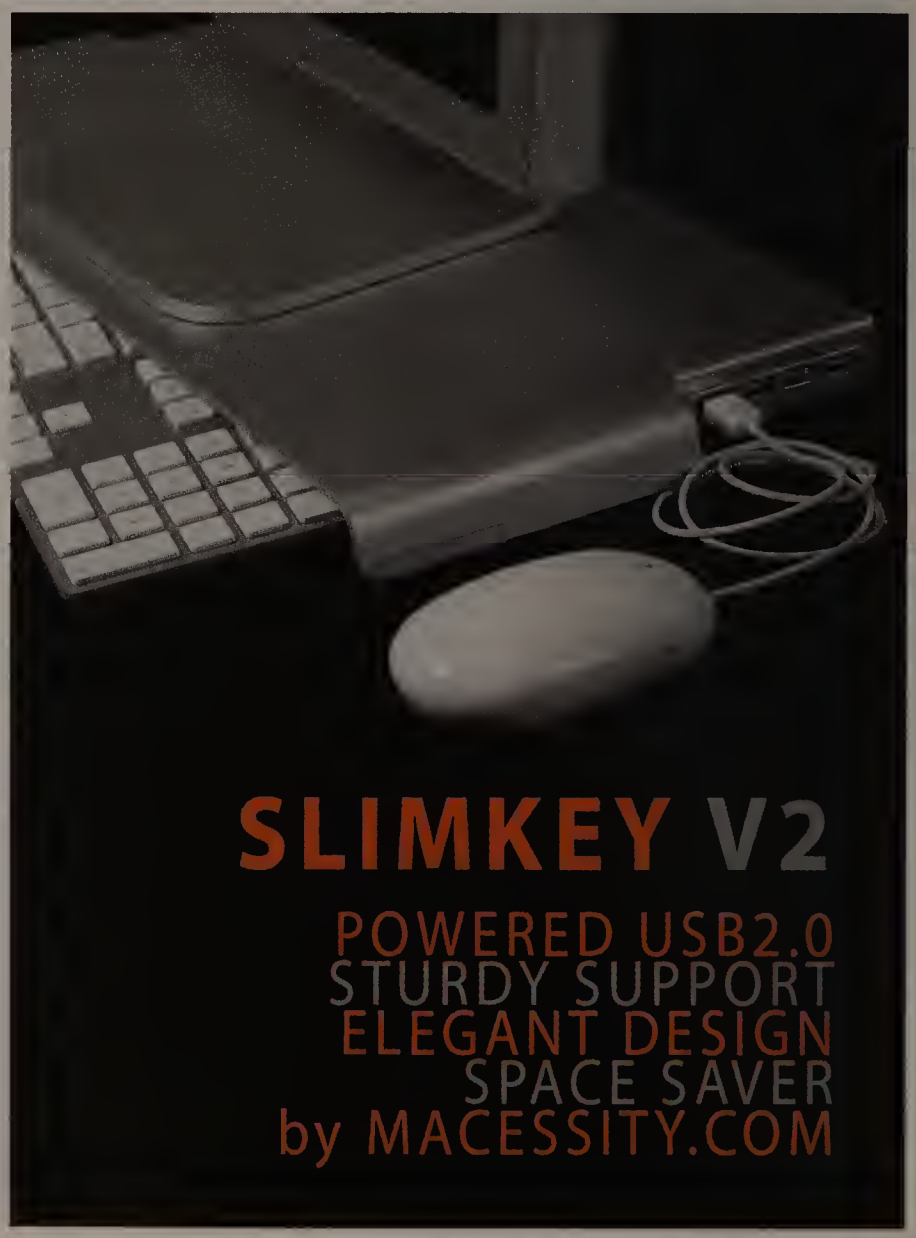

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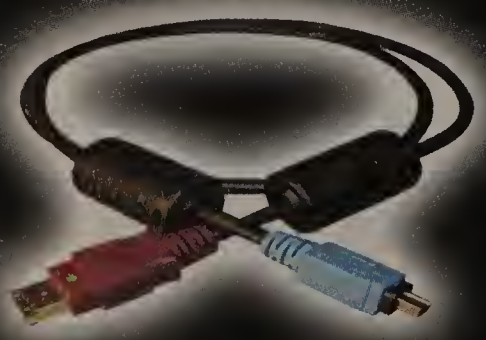

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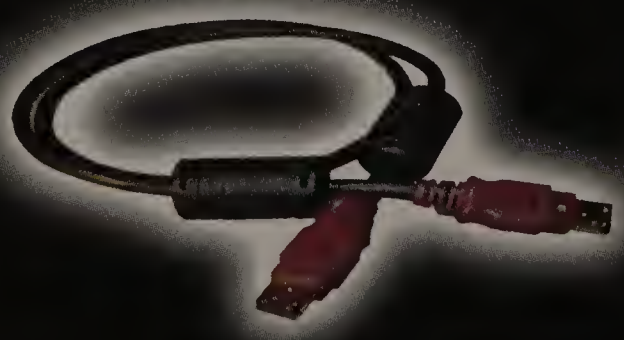

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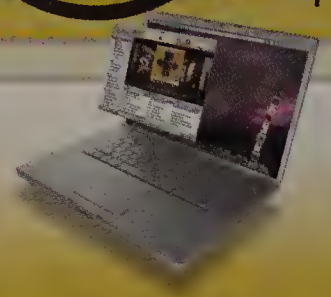

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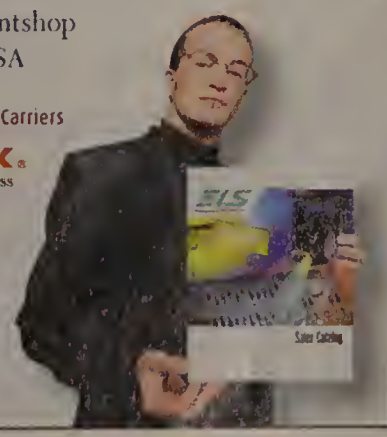

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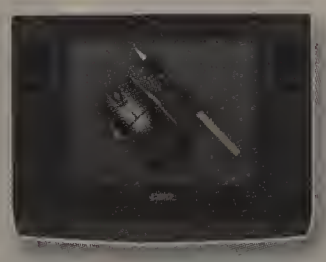

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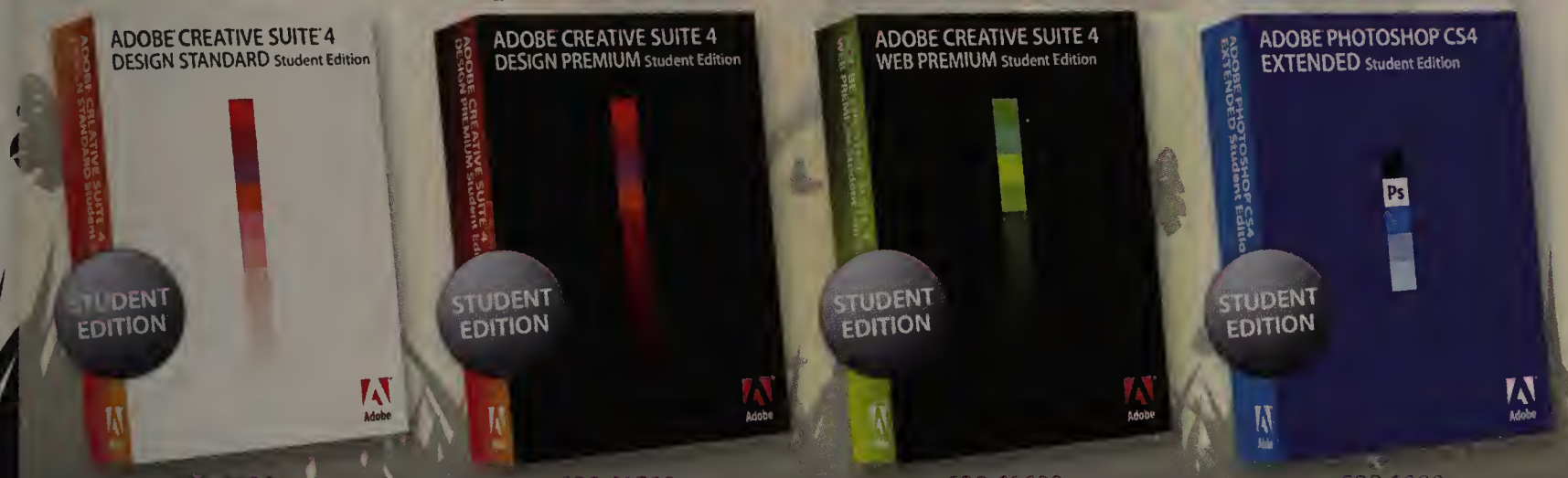

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Embracing Our Community

Macworld Expo's manager celebrates the tribe of Mac

What we think of as the Mac community grew out of the user groups of the mid-1980s. Soon after the Mac arrived, Mac users began to band together. User groups provided a welcoming environment where the adherents of this new computer could share friendly advice and learn about new products—often from the CEOs of the companies that made them. Of course, Mac user groups weren't just about tips and products. They were often as much social clubs as conduits for information.

To me, the spirit of those early user groups is the essence of the Mac community. And it survives to this day. One of the places you'll find it on display is at the annual Macworld Conference & Expo.

Gathering the Tribe

While Macworld Expo is known for many things, from Steve Jobs's keynotes to the after-hours parties, the best thing about it is that (like those old user groups) it allows people from all over the Mac world—users, vendors, pundits, and bloggers—to meet each other face-to-face. There's something about that real-world interaction that no amount of online social networking can replace.

Like any community, the Mac community has its heroes. Developers who make the coolest products, analysts who make no-holds-barred commentary, users who find innovative ways to put technology to work, digital artists who transcend the tools they use to create their works—these are the people who have clout in the Mac community. They also happen to be the people we try to highlight at Macworld Expo.

That community, with its passion, commitment, and shared love of elegant technology, has been a constant since the first Macworld Expo in 1985. It survived even through Apple's darkest days. During the uncertain times of the mid-1990s, the community bonded together, like any strong family in a time of crisis. The tone of Macworld Expos during that difficult period, when the fate of the Mac itself was uncertain, was somber but resolute.

Back in the day, when the Mac was a niche proposition, some observers wrote off the Mac community as a bunch of zealots. Today, with Apple's fortunes on the rise and the Mac selling better than ever, being a Mac user is increasingly accepted as an act of rational prudence rather than a form of religious fervor.

Sure, the community still has its die-hard fans—the ones who are willing to sleep outdoors on concrete for a chance to get into the Macworld keynote, or who tattoo Apple's logo onto their bodies. Personally, I love those ultra-excited Mac fans. I love that they're willing to shout their passion from the rooftops. After all, if the Mac community has a credo, it might be this: "Never be dull."

But most members of today's Mac community—and most of the people you'll see walking the floor at Macworld Expo—are simply people who enjoy products that are beautifully designed and that perform as promised.

To me, the spirit of those early user groups is the essence of the Mac community.

Expanding the Tent

Today, half of the new Macs Apple sells in its retail stores go to first-time Mac users. A quarter of the attendees of Macworld Conference & Expo 2008 were coming to the show for the first time. These new members of our community bring fresh perspectives and drive Apple and independent developers to make better products. They also drive the best thinkers, commentators, and speakers in the community to stay ahead of the curve.

That makes my job as general manager of Macworld Conference & Expo both challenging and rewarding. For the past year, I've been working hard to put together the 2009 edition, everything from the booths to the conference presentations to the publicity plans. As I've done so, I've been constantly cognizant that Expo is part revival meeting, part indoctrination course, part class reunion, part trade school, and part shopping excursion. I have to find something for every segment of the Mac community, from fans who have been coming since 1985 to those first-timers.

A community that began with a few users helping each other is now a mainstream market of millions. During the week of January 5 in San Francisco, they can all come together. Whether you're there in person or simply following the news from afar, I hope you're one of them.

Paul Kent is the general manager of Macworld Conference & Expo, which, like *Macworld,* is owned by IDG.

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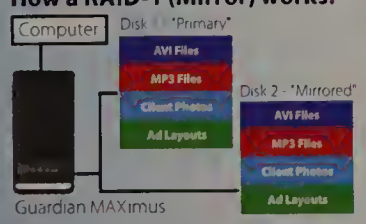

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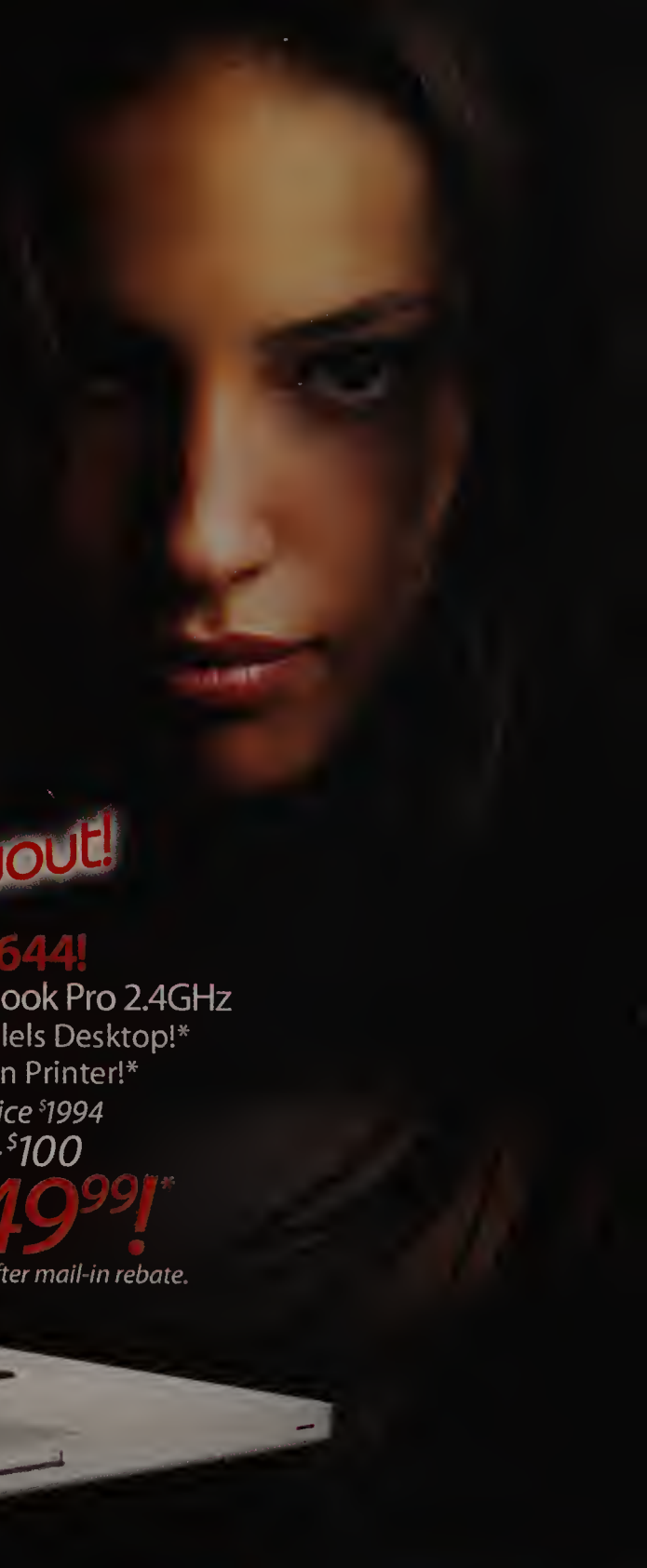

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